

GRAYSON COLLEGE

Course Syllabus

CHEM 2323 Organic Chemistry 1 Lecture and CHEM 2123 Organic 1 Lab

Fall 2016

Professor Contact Information

Instructor: Dr. Jane Johnson-Carr

Email: carrj@grayson.edu

Office Location: S205A

Office Hours: MW 11:00-12:00; 5:00-6:00; TR 2:00-3:00, F 8:00-12:00

Office Phone (903) 463-8668

Science Office Phones: (903) 463-8797 or (903) 463-8702

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Although students must register for a separate course number for lab and lecture, the two “courses” are in fact the same course and are separated for scheduling and reporting reasons. Your final grade is derived from the combination of your lecture and laboratory grades. Together the lecture and laboratory satisfy the state learning objectives (CS1, CT2, CT3, EQS2, and TW1) and therefore must be taken concurrently.

Concurrent enrollment in CHEM 2123 required. Successful completion with a grade of C or better in CHEM 1312/1112 is required. College readiness in reading required.

Course Description – from college catalog

Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Laboratory activities will reinforce fundamental principles of organic chemistry. Methods for the purification and identification of organic compounds will be examined. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS.

Student Learning Outcomes

Upon successful completion of this course, students will:

1. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality.
 2. Identify organic molecules using appropriate organic nomenclature.
 3. Describe the principle reactions for syntheses of molecules, ions, and radicals.
 4. Describe organic reactions in terms of radical and ionic mechanisms.
 5. Use spectroscopic data to determine the structure of organic molecules.
 6. Formulate appropriate reaction conditions for the synthesis of simple organic molecules.
 - L1. Perform chemical experiments, analysis procedures, and waste disposal in a safe and responsible manner.
 - L2. Utilize scientific tools such as glassware and analytical instruments to collect and analyze data.
 - L3. Identify and utilize appropriate separation techniques such as distillation, extraction, and chromatography to purify organic compounds.
 - L4. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
 - L5. Demonstrate a basic understanding of stereochemistry.
 - L6. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality in laboratory reports.
 - L7. Identify organic molecules using appropriate organic nomenclature in laboratory reports.
 - L8. Perform organic syntheses of molecules.
 - L9. Describe organic reactions in terms of radical and ionic mechanisms in laboratory reports.
 - L10. Use spectroscopic data to determine the structure of organic molecules.
 - L11. Formulate appropriate reaction conditions for the synthesis of simple organic molecules
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Required Textbooks (ISBN # included) and Materials

Organic Chemistry (with ConnectPlus Access), Carey and Giuliano, 9th edition, McGraw Hill
ISBN: 978-0-07-770589-3

The Student's Lab Companion: Laboratory Techniques for Organic Chemistry, John W. Lehman, Pearson/Prentice Hall,
ISBN 978-0-13-159381-7

Safety Goggles

Canvas Access to lab report procedures

Carbon-less copy lab notebook (1 will be provided)

Required Assignments & Academic Calendar

In case of inclement weather, emergency closings, or other unforeseen disruptions to scheduled classes, student must log onto their Canvas accounts for directions on where or how to continue their coursework.

	Date	M	W	Homework Problems (Carey 9th edition)	Connect Quizzes	Experiment and Reading (Lehman)
1	Aug 22	Chap 1	Chap 1	1.41, 42, 43, 45, 46, 47, 49, 57, 65, 66	Quiz 1	#1 Safety and MSDS p. 10-28
2	Aug 29	Chap 2	Chap 2	2.24, 26, 31, 33, 34, 36	Quiz 2	#2 Melting Points OP #33 p. 222-229
3	Sept 5	No Class	Chap 3	3.21, 25, 26, 27, 28, 32, 40, 48-51	Quiz 3	No Lab
4	Sept 19	Review	Exam 1	All Unit 1 Homework Due at Exam Time		#3 Recrystallization of Aspirin OP #28 p. 161-178
5	Sept 12	Chap 4	Chap 4	4.28, 31, 34, 38, 40, 41	Quiz 4-1, 4-2	#4 Fractional Distillation OP#32 p.208-221
6	Sept 26	Chap 4	5.1-5.3, 14-21-14.24	5.19, 20, 26, 29	Quiz 5-1,14-1	#5 Thin Layer Chromatography OP #22, p. 120, 133-140
7	Oct 3	Chap 14	Chap 14	14.31, 32 (c, d, e, f), 39, 43	Quiz 14-2	#6 Extraction of Chlorophyll OP #18, p. 95-106
8	Oct 10	Review	Exam 2	All Unit 2 Homework Due at Exam Time		#8 Column Chromatography of Spinach OP #21, p. 120-130
9	Oct 17	Chap 10	Chap 5	10.21, 29, 30 5.33, 34, 35	Quiz 10-1, 5-2	#7 Radical Bromination p. 46-54
10	Oct 24	Chap 6	Chap 6	6.19, 20, 22, 27, 32, 38, 41-45	Quiz 6-1,6-2	#9 SN1 Reaction of t-Butanol
11	Oct 31	Chap 7	Chap 7	7.31, 33, 37, 41, 45, 53 (a,c)	Quiz 7-1, 7-2, 7-3	#10 Dehydration of an Alcohol p. 72-75, 191-192, 148-151
12	Nov 7	Review	Exam 3	All Unit 3 Homework Due at Exam Time		#11 Bromination of <i>trans</i> stilbene p.55-56, 64-69, 88-92, 333-336
13	Nov 14	Chap 8	Chap 8	8.28, 29, 30, 31, 39, 46, 50, 64 (a,c)	Quiz 8-1, 8-2	#12 Synthesis of Diphenylacetylene p. 59-60, 333-336
14	Nov 21	Chap 9	Chap 9	9.16, 17, 25, 27, 36	Quiz 9-1	#12 Follow-up/Honors Lab
15	Nov 28	Review	Exam 4	All Unit 4 Homework Due at Exam Time		Lab Exam
	Dec 5	Final Exam				No Lab Meeting

Methods of Evaluation

Lecture Exams

Four (4) exams will be administered throughout the semester (including final) during the lecture portion of the course. All exams will be cumulative throughout the course and will consist of multiple choice and short answer questions. If the final exam is higher than the lowest previous exam grade, it may be used to replace that lowest exam grade.

One (1) exam will be given at the end of the laboratory portion of the course. This exam will consist of questions primarily related to laboratory procedures and reactions and may not be replaced by the lecture final.

There are no makeup exams! If you know you will be unable to take a test during the assigned time, contact me **PRIOR** to the test to make arrangements to take the test at another time. Decisions concerning alternative testing times are strictly the discretion of the professor.

Students must bring a scantron to every exam. Exam grades will be posted on Canvas. Students may view their exams after grading, but the instructor will keep all exams and scantrons.

Success in chemistry is strongly linked to completing homework and reading assignments. Homework problems, in-class work sets and Connect quiz grades will be factored into an overall participation grade, which will be equal to a unit exam grade in value.

Laboratory reports

Weekly lab report grades will be averaged together and will be equivalent to 2 exam grades

The points allotted to each laboratory report is as follows:

Pre-Lab Assignment	20 pts
Actual Lab work	50 pts.
Discussion Questions	30pts

Each student must have and maintain a proper laboratory notebook. If a student does not have their notebook with them, they will not be permitted to complete the experiment.

PRIOR TO COMING TO LAB, for each experiment, the student must complete a purpose statement and a table of chemical information. During the experiment, procedural details and experimental results must be recorded directly into the lab notebook **IN PERMANENT INK**.

Laboratory reports are to be handed in at the end of beginning of the next lab period, unless specified otherwise by the instructor. **EACH STUDENT MUST TURN IN HIS/HER OWN INDIVIDUAL REPORT**. A penalty of at 10 points per week will be assessed to lab reports turned in late. Lab reports will be returned to the student in a timely manner.

A student must earn an average grade of at least 50% on lab reports to receive a passing grade for CHEM 2323/2123. If a student's lab report average is below 50 %, they will receive an F grade for the entire course, regardless of the actual course grade calculated below. \

To determine student's final grade:

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If the final exam grade is greater than any lecture exam grade

1. Add up points earned on 3 highest scoring lecture exams
2. Add the final exam grade x 2
3. Add the points earned on the laboratory final
4. Add the average points earned on weekly lab reports x 2
5. Add the % of combined points earned on homework and quizzes (points will be posted in Canvas)
6. See chart below

If the final exam grade is the lowest exam grade

1. Add up points earned on all 4 lecture exams
2. Add the final exam grade
3. Add the points earned on the laboratory final
4. Add the average points earned on weekly lab reports x 2
5. Add the % of combined points earned on homework and quizzes (posted in Canvas)
6. See chart below

Final Grade

Grades are based on total points earned. Percentages are for comparison purposes only

percent	Points earned	Letter grade
90-100%	830-900	A
80-89%	720-829	B
70-79%	630-719	C
60-69%	540-629	D
<60%	<539 pts or < 50 % in lab	F

Methods of Instruction

Lecture: Face-to-Face course, 75 minutes/DAY (Mon/Wed) on campus,

Lab: Face-to-Face course involving hands-on experimentation 3 hrs/week on campus,
Students will work both individually and in small groups to complete laboratory experiments

Testing conducted on campus in class

Course & Instructor Policies

Students, who drop the Chemistry 2323 lecture course, must also withdraw from the Chemistry 2123 lab course.

Laboratory Safety Policies:

Chemical splash goggles must be worn in the chemistry laboratory anytime chemicals, glassware or heat are used. **NO EXCEPTIONS.** Safety "glasses" are not acceptable. This includes during lab cleanup or when any group, regardless of location, is still conducting an experiment. Students will be given only 1 warning during a laboratory period. If the student is caught without goggles later in the period, they will be dismissed from the lab and receive a grade of 0 for the experiment.

Students are not allowed to wear flip-flops, sandals or open toed shoes in the laboratory. Shoes must cover the top of the foot. Students without proper footwear will be sent home to change. Students will not be given extra time to complete labs due to coming in inappropriate footwear.

It is strongly recommended that students wear long pants or long skirts and refrain from shorts and short skirts. Laboratory coats and aprons are permitted, but will not be provided.

Students with long hair are encouraged to pull their hair back or put it up. Loose hair can be a serious hazard.

Although “accidents” do happen in the laboratory, glassware breakage is generally preventable. If laboratory equipment is damaged or broken due to carelessness, the student will be charged up to 10 points from the final course grade for each item broken or damaged.

In order to protect our local water supply, students are required to follow all chemical waste disposal guidelines given by the instructor. Failure to comply with proper waste disposal will result in a 10 point penalty for each infraction.

Class Attendance

Academic success is closely associated with regular classroom attendance and course participation. Any student missing more than 20% of the class meetings (more than 5 absences) or excessively tardy to lecture or lab (routinely more than 10 minutes late) will have their final class grade lowered by 1 letter grade. Any student missing more than 50 % of class meetings (14 or more absences) will receive an automatic F grade, regardless of actual earned grade.

All successful students, whether on campus or online, are expected to be highly self-motivated.

All students are required to participate in courses regularly and are obliged to participate in class activities and complete and submit assignments following their professors’ instructions. Students taking courses during compressed semester time frames such as mini-mester, summer sessions, and mid-semester should plan to spend significantly more time per week on the course. Responsibility for work missed because of illness or school business is placed upon the student. More than two (2) absences are considered to be excessive. In addition, students’ eligibility to receive financial aid or live in a College dormitory can be affected by withdrawal from courses. When withdrawal occurs, any tuition refund would be made in accordance with state regulations.

STUDENTS ARE REQUIRED TO ATTEND THE LABORATORY SESSION THEY ARE ENROLLED IN. If a student must be unavoidably absent from lab, they must secure permission **IN ADVANCE** from the instructor to make up the lab at another time. Unexcused absences will receive a grade of 0 for the experiment. Decisions concerning alternative laboratory times are strictly the discretion of the instructor.

Student Conduct & Discipline

All cell phones and other electronic devices must be turned off or to silent before entering the classroom. Texting during class means you are not paying attention and is unacceptable behavior. Cell phones may be used during class for legitimate educational purposes (accessing periodic tables or other chemistry apps)

Students may use laptop computers or tablets during class but are expected to be using them for chemistry classwork only. Students using laptops for other purposes will be asked to turn them off or leave the classroom.

Student Responsibility

You have already made the decision to go to college; now the follow-up decisions on whether to commit to doing the work could very well determine whether you end up working at a good paying job in a field you enjoy or working at minimum wage for the rest of your life. Education involves a partnership that requires both students and instructors to do their parts. By entering into this partnership, you have a responsibility to show up for class, do the assignments and reading, be engaged and pay attention in class, follow directions, and put your best effort into it. You will get out of your experience here exactly what you put into it – nothing more and nothing less.

TITLE IX

GC policy prohibits discrimination on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex, sexual orientation, spousal affiliation and protected veterans status. Furthermore, Title IX prohibits sex discrimination to include sexual misconduct: sexual violence (sexual assault, rape), sexual harassment and retaliation.

For more information on Title IX, please contact:

- Dr. Regina Organ, Title IX Coordinator (903-463-8714)
- Dr. Dava Washburn, Title IX Coordinator (903-463-8634)
- Dr. Kim Williams, Title IX Deputy Coordinator- South Campus (903) 415-2506
- Mr. Mike McBrayer, Title IX Deputy Coordinator (903) 463-8753
- Website: <http://www.grayson.edu/campus-life/campus-police/title-ix-policies.html>
- GC Police Department: (903) 463-8777- Main Campus) [\(903\) 415-2501](tel:9034152501) - South Campus)
- GC Counseling Center: (903) 463-8730
- For Any On-campus Emergencies: 911

Grayson County College is not responsible for illness/injury that occurs during the normal course of classroom/lab/clinical experiences.

These descriptions and timelines are subject to change at the discretion of the Professor.

Grayson College campus-wide student policies may be found at the Current Student link on the Grayson Website
<http://grayson.edu/current-students/index.html>