

Instructor: Dr. Gregory Naumiec **Office:** 130 Manion Annex **Email:** gregn@uca.edu **Phone:** 852-0692

Google Classroom: classroom.google.com

Google classroom code: wonmgac

Website: <https://sites.google.com/a/uca.edu/naumiecgrouphome>

Lecture: MW 12:00 PM – 12:50 PM Virtual
Google Meet (link in Google Classroom)

Office hours: MW 9:00 AM – 10:00 AM Will be held virtually using Google Meet
Or by appointment

What will I learn in this course?

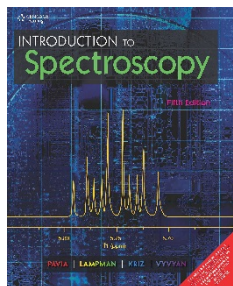
CHEM 3211 is an upper level organic chemistry course designed to introduce you to the field of characterization techniques for small organic molecules (organic spectroscopy) and build your proficiency in interpreting these spectra. The spectroscopic techniques we will discuss include:

- Infrared (IR) spectroscopy
- Mass spectrometry (MS)
- 1D nuclear magnetic resonance (NMR) spectroscopy (^1H , ^{13}C)
- 2D NMR spectroscopy (COSY, HETCOR, NOESY)

What are the objectives of CHEM 3211?

- ✓ Achieve a good working knowledge of common organic chemistry spectroscopic techniques and the instruments used
- ✓ Become skilled in interpreting IR, MS, and NMR spectra
- ✓ Use the spectra to identify unknown organic molecules
- ✓ Begin to develop professional presentations skills
 - Slide design, presentation style and substance

Required course materials:



- Introduction to Spectroscopy, 5th Ed., Pavia, Lampman, Kriz and Vyvyan.
(If you are planning to pursue organic chemistry, this is a good book to add to your collection!)
- Lecture notes and homework sets are available on Google Classroom

Prerequisite/Co-requisite:

Successful completion of CHEM 2401 (C or better) and completion of, or currently enrolled in, CHEM 3411.

How can I be successful in this course?

- ✓ Keep up to date. Try to read the appropriate chapters before coming to class so you can be prepared with any questions you have. I understand some of the chapters are quite dense and difficult to understand on your own (I'm looking at you mass spectrometry!), but looking them over will be beneficial.
- ✓ Review the lecture videos after class.
- ✓ Class participation is encouraged. Volunteering to solve problems on the board is one of the best ways to make sure you understand the material. If you are wrong in front of me and your peers, you will never make that same mistake again! Please ask questions if you need further help understanding something. Chances are, someone else in the class has the same question.
- ✓ You need to become efficient problem solvers, so... solve a lot problems! The only way to know if you truly understand the material is if you can solve the problems by yourself. The homework questions are designed to be difficult and time consuming in order to better prepare you for the exams.
- ✓ Visit me during my office hours (or make an appointment) if you need help with the material. Your success in this course is important to me!

Attendance:

Attendance is strongly encouraged. We will spend a great deal of our class time practicing problems and building our problem solving. This subject material is very difficult to learn on your own (it can look like a foreign language at times!). If you miss a class, be sure to review the video from that day's lecture. If do not complete a quiz/exam/presentation in the allotted timeframe (with the exception of a UCA sanctioned activity, documented illness, etc.) a grade of '0' will be assigned.

Disruptive behavior: Ringing phones, text messaging, and talking, are considered disruptive to me and your classmates. **Please keep yourself on mute unless you are answering a question.** Penalties for disruptive behavior may range from dismissal from class for the day, deduction of points, to an "F" grade for the course.

Grading:

Lecture	Points
<i>Exams (2)</i>	100 pts each
<i>Quizzes (5)</i>	20 pts each
<i>Group Presentation</i>	50 pts
<i>Final exam (comprehensive)</i>	200 pts
Total	550 pts

Tentative Grading Scale

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
<60%	F

Exams:

There will be two exams as well as a comprehensive final (**Wednesday May 3rd**) that will cover the material discussed in class and problems in homework assignments. Each exam will be an online exam and available in Google Classroom. They will be a mixture of short answer, multiple choice. You may be expected to upload documents. Exam grades cannot be dropped. **Makeup exams will not be given unless the reason for absence is an officially sanctioned UCA activity, documented illness, etc.** It is your responsibility to provide me with documentation prior to the exam. **Missing an exam without an acceptable excuse will result in a grade of "0".**

Homework:

Homework problems representative of the material discussed in lecture and the text will be assigned once we start a chapter. Homework will not be graded but you are strongly encouraged to do all the assigned problems to help you understand the material. You need to work on solving these question efficiently.

Quizzes:

There will be five 20 point quizzes. They will be a mixture of short answer and multiple choice. You may be expected to upload documents. They will be available on Google Classroom and you will have 24 hours to complete them. If you do not take the quiz in the allotted time period you will receive a grade of 0. The exact dates of the quizzes are subject to change and will depend upon our progress in the course. **Makeup quizzes will not be given unless the reason for absence is an officially sanctioned UCA activity, documented illness, etc.** It is your responsibility to provide me with documentation prior to the quiz.

Presentation:

Each student will give a 10 – 15 minute presentation on the primary instrumentation used in organic chemistry. These presentations will be virtual to maintain social distancing. The topics include elemental analysis, mass spectrometry, IR spectroscopy, UV-vis spectroscopy, and NMR spectroscopy. The presentations will be due the last day of class.

Organic Spectroscopy Presentation Rubric (50 pts)

	Professional (5 pts)	Quality (1-4 pts)	Amateur (0 pts)
Presentation Title Slide (5 pts)	<ul style="list-style-type: none"> • Clear concise title • Course, date, and presenters are clearly visible 	<ul style="list-style-type: none"> • The presentation has a title • Not all information is present 	<ul style="list-style-type: none"> • No presentation title/missing title slide
	Professional (12-15 pts)	Quality (6-11 pts)	Amateur (0-5 pts)
Slide Layout/Composition (15 pts)	<ul style="list-style-type: none"> • Clear, informative slide titles • Outline and conclusion slides contain all necessary information • Uncluttered, well-organized, and easy to read • Uses figures appropriately • Uses proper, not distracting animations • Reference cited in ACS format 	<ul style="list-style-type: none"> • Slides have titles • Outline and conclusions are unclear, murky • Walls of text • Lacks important figures • Distracting animations • References cited 	<ul style="list-style-type: none"> • Lack of slide titles • Disjointed slides • Lack of outline and conclusions • No references cited
	Professional (16-20 pts)	Quality (10-15 pts)	Amateur (0-9 pts)
Presentation Contents (20 pts)	<p>All topics discussed and addressed fully</p> <ul style="list-style-type: none"> • Instrument history • How the instrument works • The significance of the invention • What/how the instrument is commonly used in organic chemistry • Two examples of use in primary literature 	<ul style="list-style-type: none"> • Some topics not thoroughly discussed • Only one primary literature source 	<ul style="list-style-type: none"> • Most topics not thoroughly discussed • Some topics not discussed • No literature sources
	Professional (8-10 pts)	Quality (5-7 pts)	Amateur (0-4 pts)
Presentation Style (10 pts)	<ul style="list-style-type: none"> • Talk is 10-15 minutes in length • Engages the audience • Presentation is cohesive and fluid 	<ul style="list-style-type: none"> • Talk is slightly long or short • Out of sync presentation • Makes little eye contact 	<ul style="list-style-type: none"> • Talk is very short or very long • Disjointed presentation • Does not look at camera

TENTATIVE SCHEDULE

1/18 (M) – MLK Day (no class)	1/20 (W) – Chapter 1, Elemental Analysis
1/25 (M) – Chapter 1 cont.	1/27 (W) – Chapter 1 cont.
2/1 (M) – Chapter 2 – IR Spectroscopy	2/3 (W) – Chapter 2, cont.
2/8 (M) – Chapter 2, cont.	2/10 (W) – Chapter 3, Mass Spectrometry part I Quiz 1
2/15 (M) – Chapter 3 cont.	2/17 (W) – Chapter 3 cont.
2/22 (M) – Chapter 4, Mass Spectrometry part II	2/24 (W) – Chapter 4 cont. Quiz 2
3/1 (M) – Chapter 4 cont.	3/3 (W) – Exam 1 (CH. 1-4)
3/8 (M) – Chapter 5, ¹ H NMR Spectroscopy	3/10 (W) – Chapter 5 cont.
3/15 (M) – Chapter 5 cont.	3/17 (W) – Chapter 5 cont. Quiz 3
3/22 (M) – Spring Break (no class)	3/24 (W) – Spring Break (no class)
3/29 (M) – Chapter 6, ¹³ C NMR Spectroscopy	3/31 (W) – Chapter 6 cont. Quiz 4
4/5 (M) – Chapter 6 cont.	4/7 (W) – Exam 2 (CH. 5 and 6)
4/12 (M) – Chapter 7, Spin–Spin Coupling.	4/14 (W) – Chapter 7 cont.
4/19 (M) – Chapter 7 cont.	4/21 (W) – Chapter 7 cont. Quiz 5
4/26 (M) – Chapter 9, 2D NMR	4/28 (W) – CH 9 cont. and Combined Structure Problems Presentation Due
5/3 (M) – Final Exam 11:00 AM – 1:00 PM	

Note that this schedule is tentative; exam and quiz dates are likely to change

Drop Deadline: 4/12 Last day to drop with a “W”

University Academic Policies

Familiarize yourself with all policies included in the 2018–2019 Student Handbook, particularly the following (<http://uca.edu/student/student-handbook>):

- Sexual Harassment Policy
- Academic Policies

Americans with Disabilities Act:

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation due to a disability, please contact the UCA Office of Disability Services (450-3135). For more information please refer to the 2016–2017 student handbook (<http://uca.edu/student/student-handbook>).

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. For more information please refer to the 2016–2017 student handbook (<http://uca.edu/student/student-handbook>).

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.* For more information please refer to the 2016–2017 student handbook (<http://uca.edu/student/student-handbook>).

Building Emergency Plan Statement:

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.

Student 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 on the 13th week of instruction through the end of finals week by logging into myUCA and clicking on the Course Evaluations task.