

# Chemistry 2211

## Fall 2020

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<u>Instructors</u>	<u>Office Hours</u>	<u>Email</u>
Dr. Rupa Gokal	MWF 11:30am-1:00pm (Zoom)	rugokal@uga.edu
Dr. Richard Morrison	MWF 2:45pm-4:00pm (Zoom)	rwm@uga.edu

### Lectures:

Dr. Gokal (13095) MWF 10:20am-11:10am, online synchronous and CHEM 430\*

Dr. Morrison (13096) MWF 1:50pm-2:40pm, online synchronous and SLC 085\*

Dr. Gokal (13098) MWF 4:10pm-5:00pm, online synchronous and SLC 085\*

\*(Lectures will be presented via Zoom. Students will be **required** to utilize all online components. A rotating attendance schedule for those desiring to attend in-person lectures will be announced on eLC.)

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**Required Textbook:** *Organic Chemistry* Paula Yurkanis Bruice (8e, 2016).

### **Required Technology for Online Course:** (two internet capable devices)

Class: computer/phone/tablet (with working microphone, speaker/earbuds) capable of running Zoom and Turning Technologies App

Exams: (same two devices used for summer 2020 organic courses)

1. a computer running GradeScope and CHEMDraw (so you can access and work the exams)
2. a smartphone/tablet/computer with camera or a free-standing webcam for the TA to continuously view you and your computer screen on Zoom during the exam

### **Required Ancillaries:**

- *Study Guide and Solutions Manual for Paula Yurkanis Bruice Organic Chemistry*, 8e.
- *Turning Technologies* app. **Go to eLC homepage to register phone app. You must link to eLC and have a current Turning Point License to receive credit.**
- ChemBioDraw is REQUIRED for use in labs and exams. Download for Mac and PC free at: [https://eits.uga.edu/hardware\\_and\\_software/software/chembiooffice/](https://eits.uga.edu/hardware_and_software/software/chembiooffice/)  
Access free from any platform browser using UGA vLab:  
<https://eits.uga.edu/support/vlab/>

**Recommended:** Molecular Model Set marketed for “organic chemistry” (*The Molymod* by Indigo Instruments, or comparable kit).

**Attendance:** CHEM 2211 is a rigorous and fast-paced course. Absences will seriously affect your grade. Attendance will be taken via Turning Technologies App and you are required to be in attendance for all lectures. Attendance is specific to the section in which you are enrolled. Material for which students are responsible for each exam is described on the approximate course schedule (last page of syllabus) and will be updated on eLC, if necessary, by Tuesday morning prior to the Wednesday exam.

**Assigned Problems:** To be successful in CHEM 2211 you must routinely work all of the assigned problems. You will be more successful if you work a few problems daily rather than all of the problems immediately prior to the exam. Use the solutions manual only after you have thoughtfully and carefully considered related lecture and textbook presentations of the material.

**Hour Exams:** Four 60-minute exams, each graded out of 100 points, will be administered Wednesday nights from 8:00pm-9:00pm. A proctoring check-in period on Zoom from 7:40pm-7:55pm will occur prior to each exam. The TA proctor must confirm student check-in prior to the beginning of the exam (Details to follow on ELC). Online exams will be released on GradeScope at 8:00 pm on the exam dates.

<b>Wednesday</b>	<b>September 9, 2020</b>	<b>8:00 pm to 9:00 pm</b>
<b>Wednesday</b>	<b>October 7, 2020</b>	<b>8:00 pm to 9:00 pm</b>
<b>Wednesday</b>	<b>November 11, 2020</b>	<b>8:00 pm to 9:00 pm</b>
<b>Wednesday</b>	<b>December 2, 2020</b>	<b>8:00 pm to 9:00 pm</b>

Your lowest hour exam score will be dropped.

**Exam Requirements:** Students are required to check-in on Zoom with their UGA ID. Students must be identified during check-in for the exam to count toward their final grade. Students will be asked to complete the exam on a web browser via GradeScope under TA supervision on Zoom as described in the Required Technology section. Students may also be asked to create structures in CHEMDraw for upload during the exam. Students may use a web cam and position a mirror behind them so that the proctor sees what the student is looking at. This obviates the need for a smartphone and the vulnerability to any cell phone drops.

### **Fall 2020 Organic Chemistry Online Exam Connectivity Issue Guidelines and Resolutions**

A stable internet connection sufficient for taking the exams is a REQUIREMENT for this online exam format. If you are unable to complete the exam in GradeScope's online exam platform under proctoring supervision for the entire exam (check-in to submission), you will receive an Incomplete for that exam (see guidelines below). Students should attempt to resolve any issue known to them and complete the exam to the best of their abilities. The instructor will review the circumstances and resolve any issues per the following guidelines:

- Students will be allowed to finish and submit the exam.
- One interruption of less than two minutes in internet connectivity will have no impact on the exam.
- An extended interruption or multiple interruptions in internet connectivity during **one** exam will render the exam invalid. This invalid exam may serve as the dropped exam for the semester. Students will be allowed to remain in the course and take all remaining exams. Alternatively, an Incomplete grade may be assigned. To complete the course students may select one of the following options: 1) they may take an ACS standardized exam at the end of the semester to replace the exam rendered invalid due to inconsistent internet connectivity, or 2) they may take an exam comparable to the invalid exam when it is offered during the Spring semester.
- Interruptions in internet connectivity for two or more exams during the Fall semester will require an Incomplete grade. Students may complete the course in a subsequent semester.

**Final Exam:** A 90 minute online comprehensive final exam worth 130 points is scheduled for Monday, December 14, 2020 from 7:00pm-8:30pm. The final exam is mandatory and will be implemented in similar format and exam requirements as each of the 4 in-semester exams. Students must be identified during check-in for the final exam to count toward their final grade.

**Final Grade Determination:** If you score below 50% on the final exam, you will receive an 'F' for the course. If you score 50% or higher on the final exam, your final grade will be based on the **total points** earned out of **450 total possible points**, summing **the three highest hour-exam scores (300 total possible points)**, **the final exam score (130 total possible points)**, and **up to 20 possible points for classroom responses using your clickers**. Final grade assignments are determined using the following scheme:

<b><u>Range</u></b>	<b><u>Points (out of 450)</u></b>	<b><u>Approximate %</u></b>
<b>A</b>	394-450 total points	87.5% - 100%
<b>A-</b>	382-393 total points	85.0% - 87.4%
<b>B+</b>	371-381 total points	82.5% - 84.9%
<b>B</b>	326-370 total points	72.5% - 82.4%
<b>B-</b>	315-325 total points	70.0% - 72.4%
<b>C+</b>	304-314 total points	67.5% - 69.9%
<b>C</b>	270-303 total points	60.0% - 67.4%
<b>D</b>	225-269 total points	50.0% - 59.9%
<b>F</b>	0-224 total points	< 50.0%

**In-Lecture Credit:** Class participation will be based upon your in-class responses using the Turning Technologies app. In-class questions will be asked at random during the semester and will vary in frequency based on the instructor. The percentage of the in-class questions that you answered will be converted into a corresponding number of points out of a possible 20 and will be factored into the 450 total points for the semester.

**Exam Corrections and Regrades:** We endeavor to grade exams consistently and accurately. However, if your exam is mistakenly marked as incorrect but your answer is in complete agreement with the posted exam key on eLC **and** the rubric on GradeScope, you may reply from each question in GradeScope with a brief description of your issue. We will make any necessary grading and totaling corrections and your corrected total will appear on eLC when the subsequent exam scores are uploaded. BE CAREFUL! If we find that there is no error in grading or totaling, 5 points will be deducted from your exam total. “Grading correction” requests are accepted until Friday at 5pm the week graded exams are returned. **Instructors will not respond to credit questions pertaining to the exam until after the resubmission deadline has expired.**

**Withdrawal Policy:** The mid-point of the semester is October 13, 2020. The last day to withdraw from CHEM 2211 and 2211L is Tuesday October 27, 2020. A grade of ‘W’ is assigned to all withdrawals made prior to the withdrawal deadline, irrespective of performance in the course. Withdrawal is accomplished via the **Athena** system. You are not required to receive approval from your instructor. Go to the withdrawal section of Athena and follow the instructions. CHEM 2211 and CHEM 2211L are corequisite courses. You may not remain enrolled in CHEM 2211L if you withdraw from CHEM 2211. **There are no exceptions to this policy.** After the mid-semester withdrawal deadline (October 27, 2020), a student who withdraws from the course is assigned a grade of ‘F’ by the UGA registrar.

**Incomplete Policy:** An incomplete grade, ‘I’, may be assigned to students that are passing CHEM 2211 but are unable to complete **all** of their university coursework during the current semester due to unforeseen personal and/or medical circumstances. An incomplete grade is not assigned to students who are able to complete their university coursework but choose not to complete chemistry due to poor performance. Franklin College bylaws state that students failing a course are ineligible to be assigned an “I”.

**Grading and Partial Credit:** The Franklin College Bylaws state, “The standards by which grades are assigned, the number and relative weight of assignments on which grades are based, and decisions to allow students to makeup or retake exams or assignments missed for, or otherwise compromised by the student’s personal circumstances are solely within the discretion of the instructor.”

**Email Etiquette:** Emails must originate from your UGA email account and be sent to the instructors’ UGA email accounts listed above. You must allow at least 24hrs for a response due to the volume of emails that instructors receive daily. Your emails must be both courteous and coherent. Instructors will not reply to emails that are discourteous or indecipherable (slang, misspellings, etc...). **Instructors will not respond to questions already addressed in the syllabus or on eLC.** Please check these resources first before sending an email. Experience has demonstrated that it is not effective to answer homework or concept questions via email.

**Login to eLC:** To Login to eLearning Commons, you will need a UGA MyID. If you have a UGAmail account, your UGAmail login and password will be your UGA MyID login and password. If you do not have a UGA MyID, go to <http://www.uga.edu/myid> and request one online. If you have an account and have forgotten your password, you can also reset your password by going to this site. **eLearning Commons is for scholarly communication only. It is not a complaint box or an advertising forum.** Course and grading concerns should be individually addressed during office hours with the lecture professor. Inappropriate use of eLearning Commons will result in revocation of eLC privileges for CHEM 2211 and possible dismissal from the course.

**Academic Honesty:** As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty," and the Student Honor Code. All academic work must meet the standards described in "A Culture of Honesty" found at: [www.uga.edu/honesty](http://www.uga.edu/honesty). Lack of knowledge of the academic honesty policy is not a sufficient explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

**Family Educational Rights and Privacy Act (FERPA):** The Family Educational Rights and Privacy Act of 1974 (FERPA) protects the privacy of student education records and allows the student to determine what information should be confidential, and who should have access to that information. Professors cannot discuss the academic standing or progress of a student with anyone other than authorized university personnel unless a release is granted by the student. Professors cannot respond to academic standing or progress emails unless they originate from the student's UGA email account. On occasion professors receive phone calls from parents and other concerned family members requesting information regarding student progress. Your professor will direct them to the student to obtain authorization prior to release of any protected information.

### **Coronavirus Information for Students**

#### **Face Coverings:**

Effective July 15, 2020, the University of Georgia—along with all University System of Georgia (USG) institutions—requires all faculty, staff, students and visitors to wear an appropriate face covering while inside campus facilities/buildings where six feet social distancing may not always be possible. Face covering use is in addition to and is not a substitute for social distancing. Anyone not using a face covering when required will be asked to wear one or must leave the area. Reasonable accommodations may be made for those who are unable to wear a face covering for documented health reasons. Students seeking an accommodation related to face coverings should contact Disability Services at <https://drc.uga.edu/>.

#### **DawgCheck:**

Please perform a quick symptom check each weekday on DawgCheck—on the UGA app or website—whether you feel sick or not. It will help health providers monitor the health situation on campus: <https://dawgcheck.uga.edu/>

### **What do I do if I have symptoms?**

Students showing symptoms should self-isolate and schedule an appointment with the University Health Center by calling 706-542-1162 (Monday-Friday, 8 a.m.-5 p.m.). Please DO NOT walk-in. For emergencies and after-hours care, see <https://www.uhs.uga.edu/info/emergencies>.

### **What do I do if I am notified that I have been exposed?**

Students who learn they have been directly exposed to COVID-19 but are not showing symptoms should self-quarantine for 14 days consistent with Department of Public Health (DPH) and Centers for Disease Control and Prevention (CDC) guidelines. Please correspond with your instructor via email, with a cc: to Student Care & Outreach at [sco@uga.edu](mailto:sco@uga.edu), to coordinate continuing your coursework while self-quarantined. If you develop symptoms, you should contact the University Health Center to make an appointment to be tested. You should continue to monitor your symptoms daily on DawgCheck.

### **How do I get a test?**

Students who are demonstrating symptoms of COVID-19 should call the University Health Center. UHC is offering testing by appointment for students; appointments may be booked by calling 706-542-1162.

UGA will also be recruiting asymptomatic students to participate in surveillance tests. Students living in residence halls, Greek housing and off-campus apartment complexes are encouraged to participate.

### **What do I do if I test positive?**

Any student with a positive COVID-19 test is **required** to report the test in DawgCheck and should self-isolate immediately. Students should not attend classes in-person until the isolation period is completed. Once you report the positive test through DawgCheck, UGA Student Care and Outreach will follow up with you.

**Course Syllabus:** The course syllabus is a general plan for the course. Deviations announced to the class or placed on eLC by the instructor may be necessary.

# CHEM 2211 Learning Objectives

Upon successful completion of this course students will be able to:

- Use common and systematic nomenclature protocols to name alkanes, alkenes, alkynes, haloalkanes, ethers, amines and alcohols;
- Name and identify common functional groups;
- Name and identify structural subunits for organic compounds;
- Represent 3-D structures using Newman Projections, Fischer Projections, perspective structures, Haworth structures, sawhorse structures, and cyclohexane chair and boat conformers;
- Identify and distinguish between constitutional isomers, conformational isomers, configurational isomers, enantiomers, and diastereomers;
- Determine and calculate energy differences between stereoisomers;
- Construct reaction profiles for substitution and addition reactions that demonstrate  $\Delta G^\circ$  energies for exothermic reactions, endothermic reactions, activation energies, reaction intermediates, transition states and rate-determining reaction steps;
- Recognize and use electrophilic addition reactions for alkenes and alkynes;
- Devise brief synthetic transformations for alkenes and alkynes using electrophilic addition reactions and functional group interconversions;
- Write mechanisms for synthetic transformations using the curved arrow formalism;
- Describe electron delocalization for organic compounds and ions and the resultant impact on reactivity;
- Identify aromatic compounds and antiaromatic compounds and describe their molecular orbital profiles;
- Predict competing reaction outcomes for  $S_N2$ ,  $S_N1$ , E2 and E1 reactions;
- Use organometallic compounds and reagents in organic synthesis;
- Describe reactions involving radicals and predict their products;
- Elucidate organic structures using mass spectrometry, infrared spectroscopy, UV/Vis spectroscopy, and NMR spectroscopy.

# APPROXIMATE COURSE SCHEDULE

## Reading Assignment

Chapter 1 – Electronic Structure & Bonding (Brief Introduction/ Review)

Chapter 2 - Acids & Bases (Brief Introduction/Review)

Chapter 3 - Introduction to Organic Compounds

## Problem Assignment

1-49, 51-53, 57-74, 78

1-52, 53-61, 65, 67-74  
Acids/Bases Tutorial

1-54, 55, 57-62, 64, 67-74,  
76-87, 89, 90

## **EXAM 1**

**Wednesday, September 9, 2020**

**8:00 - 9:00 PM**

Chapter 13 - Introduction to Mass Spec, IR, and UV-Vis

1-33, 41-43, 45-52, 54- 65, 67-  
69, 71, 74

Chapter 4 - Isomers (Stereochemistry)

1-64, 65-97, 99-105

Chapter 14 - Introduction to  $^1\text{H}$ NMR and  $^{13}\text{C}$ NMR Spectroscopy

1-44, 47-71, 74-79

## **EXAM 2**

**Wednesday, October 7, 2020**

**8:00 - 9:00 PM**

Chapter 5 - Alkenes: Structure & Nomenclature; Reactivity & Kinetics

1-38, 39-62, 64, 65 Curved  
Arrows Tutorial

Chapter 6 - Reactions of Alkenes & Stereochemistry of Addition

1-54, 55-71, 73-90, 94-97,  
101-103

Chapter 7 - Reactions of Alkynes & Introduction to Synthesis

1-28, 29-39, 41-53, 55-57,  
59-60

## **EXAM 3**

**Wednesday, November 11, 2020**

**8:00 - 9:00 PM**

Chapter 8 - Delocalization of Electrons & Aromaticity

1-60, 61-76, 79-83, 85- 95, 97-103,  
109 Resonance Tutorial

Chapter 9 - Substitution & Elimination Reactions

1-66, 67-121, 123-131

Chapter 12 - Radical Reactions

1-25, 26-27, 29-31, 33-34, 36-  
59, Curved Arrows Tutorial

## **EXAM 4**

**Wednesday, December 2, 2020**

**8:00 - 9:00 PM**

## **FINAL EXAM**

**Monday, December 14, 2020**

**7:00 - 8:30 PM Rooms TBA**