Hi everyone! With the ever-changing circumstances surrounding the COVID19 pandemic, the information below is subject to change. Should any changes be made, you will be notified on both OAKS and via your College of Charleston email account. Thank you for your understanding, I’m excited to get this semester started!

- Dr. G.

Important note: If you have any concerns regarding the course format, the acquisition of course materials, course policies, or any other matter, please reach out to me via email — I want you in my class, and I want you to succeed. That matters to me and so do you.

Instructor: Michael W. Giuliano
Office: 320 School of Sciences and Mathematics Building (SSMB)
Email: giulianomw@cofc.edu
Office Phone: (843) 953-8099
Connect web page: to be posted to OAKS
Zoom links and associated Kaltura Channel: to be posted to OAKS

Office hours: Subject to change. Monday and Wednesday from 9:00-9:50 am, Friday from 12:30 pm-2:00 pm. Office hours, even if we return to in-person instruction, will be online via Zoom meetings. The format of these sessions will be as follows: Monday and Wednesday — bring problems you’ve been working on, ask questions about lectures and in-class exercises, and we’ll go over it all. These sessions will be recorded and available to the entire class. Friday - these hours are for “walk-in” 1-on-1 meetings where students can join a Zoom meeting or make an appointment for this window, and I’ll meet individually to address questions, study tips/concerns, etc. Friday sessions will not be recorded.

Lecture: Chemistry 232, Section 01. CRN: 10183. Class meets Monday, Wednesday, and Friday from 11:00-11:50am. In accordance with the College of Charleston Back on the Bricks plan, we will be meeting (synchronously) via Zoom meetings at our normally scheduled lecture time for the first several weeks of the semester. As of this time, will be back in the classroom the week of September 14th, 2020 our classroom would be Rita Rm. 154 at that time. Please note, the format of this class is flipped! The next page of the syllabus discusses format and what a week in the course would look like. We will still meet for our scheduled time, but expect to have notes, a notebook/paper, and your pencil at the ready – we’ll be using class time to work through structured exercises corresponding to material in your textbook and posted recorded lectures. The goal of the course’s format is to help you build your problem-solving skills across several different problem types, and it is my goal to be there for as much of that specific process as possible.

Co-requisite: You must be concurrently registered for or have previously taken Chemistry 232 laboratory (232L) and taken and received passing grades in Chemistry 231 and 231L.

Important dates during the semester: Monday, August 31st, 2020 – last day to drop/add; Monday, September 14th, 2020 – In-person instruction begins; Wednesday, October 28th, 2020 – last day to withdraw with a grade of W; Tuesday, November 3rd, 2020 – no classes, Election Day; Tuesday, November 24th, 2020 – last day of in-person instruction; Wednesday, November 25th through Friday November 27th, 2020 – no classes, Thanksgiving; Week of Monday November 30th, 2020 – All classes resume in online format; Friday, December 4th, 2020 – Last day of classes; Monday, December 7th, 2020 – Reading Day.

Exams: All exams are in the regular classroom at normal class time. This schedule will be posted to our OAKS page.

Final Exam: Wednesday, December 9th from 10:30 am to 12:30 pm, administered online


How do you earn your points in organic chemistry and what will you be learning?

In this course we continue your journey and training in organic chemistry in light of reactions of increasing mechanistic complexity and increasing usefulness in the context of building organic molecules. You may ask, as my best friend once did in college “I want to be a surgeon, why in the world do I need this?” Just as we consider first semester organic chemistry to be training for your mind, so then is this semester. A good surgeon must be able to make the proper incisions with the proper tools and in the proper order; a successful organic chemist makes the right bonds with the right reactions and in the right sequence to yield a target molecule. This course will encompass and build upon the information you learned in 192 and expand it to new reactions and a powerful spectroscopic technique called Nuclear Magnetic Resonance Spectroscopy, which forever transformed science and medicine as we know them.

Broadly speaking, organic chemistry itself forever transformed science and medicine. As soon as the field became a science of synthesis, organic chemists appreciated that they could begin attempting to build the molecules that compose and are produced by living organisms. They looked at the molecular space within the continuum that spans atoms all the way up to populations of organisms and ecosystems, and asked “What are living things made of? Can we make those substances? Can we make substances like them? How might we use such molecules?” By the early 20th century, Emil Fischer won the Nobel Prize for his work with nucleobases, carbohydrates, and stereochemistry, less than 80 short years after the field as we know it began. Less than a century later, Percy Julian was working out how to convert biomass into therapeutic steroids on industrial scales, Dorothy Crowfoot Hodgkin was uncovering the atomic structures of penicillin, vitamin B12, and insulin, and Linus Pauling was using the same logic that controls organic conformers to propose and describe secondary structure in polypeptides. Today, organic chemistry is at the root of every major pharmaceutical drug, it permeates daily life in the form of medicines, technology, and human biology. We will explore as much of it as we can, learning how to build molecules and why it matters. Welcome!

Student Learning Outcomes:

- Demonstrate intermediate communication skills within organic chemistry for example structure, nomenclature, mechanisms, reaction schemes.
- Draw and interpret mechanisms for organic reactions of increased sophistication.
- Integrate knowledge and principles of organic reactions and reactivities to make reasonable predictions about likely outcomes when presented with related chemistry or retrosynthetic schemes.

Course Topics Outline:

- Chapter 13: Recap and S.Ar
- Chapter 14: Spectroscopy
- Chapter 15: Organometallic Compounds
- Exam 1
- Chapter 15: Organometallic Compounds
- Chapter 16: Alcohols, Diols, and Thiols
- Chapter 17: Ethers, Epoxides, and Sulfides
- Chapter 18: Aldehydes and Ketones: Nucleophilic Addition to the Carbonyl Group
- Exam 2
- Chapter 19: Carboxylic Acids
- Chapter 20: Carboxylic Acid Derivatives: Nucleophilic Acyl Substitution
- Chapter 21: Enols and Enolates
- Exam 3
- Chapter 21: Enols and Enolate
- Chapter 22: Amines
- Special Topics
- Exam 4
Graded Components:

- **Exams**: (15% each) Students will be given four midterm exams. Each midterm will be graded out of 100 points. Exams will be taken remotely in your study space by bringing up a PDF on the computer screen and filling out a pre-supplied answer sheet, which is to be scanned and submitted prior to the end of the allotted time period. Your notes and text are the only acceptable resources during this time. Please refer to the academic integrity policy found below. If a student completes all of the midterm exams, then the final exam grade may replace their lowest exam score, provided it is higher than the average score of their exams.

- **Synthesis Problems**: (10% total) A worksheet of synthesis problems will be handed out to accompany each exam. Students may collaborate with up to two peers from your own class on these and no one else. They will take some time to complete, and should be used to bring together the reaction chemistry in your ever-expanding chemical toolbox. These will be scanned as a single PDF and submitted to and OAKS dropbox. You must include your collaborators names at the top of your assignment. Be wary of deadlines – late assignments cannot be accepted.

- **Connect Problems**: (5%) Every one-to-two weeks, a set of problems from Connect corresponding to the use of reactions in synthesis will be assigned. Each assignment will have multiple attempts. They will not be strictly graded, but instead on a scale based on the number correct. Be wary of deadlines – late assignments cannot be accepted.

- **Final Exam**: (15%) The final exam is a departmentally-written, online multiple-choice exam, with input from all of the organic instructors meant to serve as a comprehensive test of organic chemistry knowledge. While it includes some first-semester content, it is weighted toward the current semester’s course. Raw scores will be scaled in a manner similar to how ACS exams have been scaled in past semesters.

- **Participation**: (10%) Each week’s online lectures have some questions embedded in them. Answer the questions separately, and upload your answers as a single PDF by Saturday night. Do your weekly-ish Connect problems. Your goal here is to do your best, with the purpose behind the PDF submissions being so that I can track how well the class on the whole and all of you are doing individually with the online lectures. They’re not graded, this is solely completion. If I find that the material just isn’t sticking, or that something is not working, I, as I’ve done in semesters past, will change things accordingly – your learning really matters to me, and this is a way that I can keep track of it, and give you all credit in the process. Additionally, you must post and respond to at least one question substantively on our OAKS discussion board – do not worry about being wrong, or if it seems like a simple question – all of it is an opportunity for us to learn!

- **Book Problems**: Book problems within each chapter and at the end of each chapter are will be recommended. I encourage you all to have a separate notebook in which you solve problems during and after your reading of the text. Problem-solving this semester should be a continuous, almost daily exercise. These specific problems are not directly incorporated into your grade, however, the most successful students typically work through nearly all of the book problems. Students who do not work large numbers of problems are historically less successful.
Final Grade Calculation:

Option 1 – All exam scores are used.
- 4 midterm exams = 100 points
- Final exam = 100 points
- Synthesis = 70 points
- Connect = 30 points
- Participation = 70 points

Option 2 – Final exam score replaces lowest score.
- 3 highest midterms = 300 points
- Final exam = 200 points
- Synthesis = 70 points
- Connect = 30 points
- Participation = 70 points

670 points total for both options

Grading Scale: There will be no rounding of scores. A score of 92.99 remains an A-, an 89.99 remains a B+.

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What does an ideal week in Chem 232 look like?

This outline will include examples of the different components of the class (graded components are on the following page) and how a student might ideally approach the class in a given week that would have three class meetings. The class format is flipped. Lecture content will be covered in three videos, to be posted before the weekend preceding the week they’ll be covered. Each video corresponds to an in-class session the following week and will have some questions posted (and repeated at the end) to help guide the emphasis of your note-taking. Your notes, and your separate answers to those questions should be at the ready for each in class meeting, where we’ll apply the lecture material to problems that use it. For example, if we covered a series of reactions, then we’ll practice predicting product, reagents and starting materials, a mechanism, and we’ll try a short synthesis. PDF files of these exercises will be available before each class.

At all times: Note any questions you’ve got. Post them to our class discussion board, or email them to me, or save them for an office hour session or a class period, but be sure that your questions do not go un-asked – I want to hear them and to answer them! Importantly, do not be afraid of being wrong – that is how we learn and it is why we use problem-solving to explore this awesome material. I love being wrong, it means I get to learn more chemistry!

Sunday – Watch the lecture video corresponding to Monday. Be sure to download the notes files, and to take good notes yourself! Notes aren’t just structures and arrows – there are explanations that accompany all of it. Answer the questions posed at the start of the lecture and again at the end.

Monday – If you have some questions from practicing problems in your text, or from reviewing the lecture materials, attend office hours in the morning. Attend our class meeting. Videos of these will be posted to Kaltura, but there is no replacement for interactive problem solving with your peers and getting realtime feedback. Have the day’s worksheet ready to go before class starts, and finish anything we don’t wrap up afterwards.

Tuesday – Finish Monday’s material. Watch the lecture video for Wednesday, and take your own notes and use the notes files too. Answer the questions posed at the start of the lecture and again at the end.

Wednesday – If you have some questions from practicing problems in your text, or from reviewing the lecture materials, attend office hours in the morning. Attend our class meeting. Have the day’s worksheet ready to go before class starts, and finish anything we don’t wrap up afterwards.

Thursday - Finish Wednesday’s material. Watch the lecture video for Friday, and take your own notes and use the notes files too. Answer the questions posed at the start of the lecture and again at the end.

Friday – Attend our class meeting. Have the day’s worksheet ready to go before class starts, and finish anything we don’t wrap up afterwards. If you’d like a 1-on-1 meeting, schedule one with me via email, or just attend the Zoom session and wait for me to admit you in from the waiting room. I thank you for your patience in these Friday sessions.

Saturday – Recap the week by reading in your text and doing the recommended back-of-chapter problems. If you work better by reading ahead in the book before lectures, then by all means do that instead. Do the required Connect retro/synthesis problems and submit your answers to the lecture video questions to the week’s OAKS dropbox.

Whew! Did you get all of that?!

So that looks like a whole lot of material for a given week. It is. However, if you are taking a normal organic lecture course, reading ahead in your book, and working problems as you should be, then this format is a very similar time investment. The big difference is what you are doing when you’re in live sessions with me. Study groups, tutoring, CSL visits, in-person office hours, and other forms of communal problem-solving practice are disrupted, as are all of our usual individual routines. With the course in the format as described, I want to work with you as much as is humanly possible to learn this material by applying lecture content to focused problem solving. I do understand that if an ideal week doesn’t happen or can’t happen, it might just be because you’ve figured out how to work with this material in your own way, and that is awesome.
Students from Me

- **Trust.** I trust you to complete your own work and to figure out a way through the material that is the best for you. I trust you to complete this course with the integrity and character I know you all have. If we are able to return to in-person learning, I also trust that you will not come to class if you are exhibiting any kind of symptoms. You can trust me to do the same.

- **Compassion.** I know this is anything but a typical year. I am expecting us to have to operate with contingencies and you can expect that I will work with you should problems arise.

- **Respect.** You are all grown and intelligent individuals, and I will treat you as such. I will treat you as students who I know have other work on their schedules as well.

- **Help.** I will be your biggest champion in your efforts to learn organic chemistry, and I will do my best to help you learn how to study and master it.

- **Communication** – this is related to the above. I will always communicate with advance notice, and I will present multiple methods for you to contact me and/or pose questions on the material.

- **Enthusiasm.** I just LOVE this stuff!

- **Preparedness and Communication.** I have a plan for the entirety of the semester and nearly every contingency. Rest assured I will work my hardest to make sure you get the content and learning experience you need for the course.


Me from Students

- **Trust.** Trust that I have your best interests at heart in the design and execution of this class. Trust that there is specific, vetted purpose behind each component of the course. Trust that I will, in the event of any illness or symptoms should we be back in person eventually, not come to class and communicate accordingly a contingency plan for online sessions.

- **Compassion.** Please be understanding as our current pandemic circumstances affect me and my family as well. Please be understanding of your peers.

- **Respect and Understanding for my time, and for that of your peers.** I will do my best to give you as much time as I can, but please understand there are other demands on my efforts and attention. Thank you very much for this. Your peers will also need my time too, and will also be under different circumstances than you – we will get through and flourish this semester together if we give each the respect and understanding we all deserve.

- **Communication.** Please communicate your questions/concerns to me early and often. Email is far and away the preferred, choice for this.

- **Preparedness.** Read your book, work through the components of the course before synchronous sessions, do the assigned work. This is a demanding class, I will not describe it as otherwise, and your preparation and dedication to a good schedule of working with the material is key to your success.

- **Timeliness.** I expect work to be submitted at the appropriate deadlines so that I can grade it and give you the feedback necessary to improve your learning this semester.
Technology: For this course, run in a hybrid format even after the College initiates in-person instruction, students must have access to a computer with a web camera, microphone, and internet access. Please consult https://it.cofc.edu/laptops/ if you have concerns about access to this equipment, as the College does have some resources available. These are essential resources for the weeks that the course is run online to start and end the semester, and throughout. Please communicate with me and consult the link above if this is an issue.

Learning chemistry and being college students in a pandemic: The COVID19 pandemic has been with us now for nearly seven months, and it will likely be a part of our lives for most of the semester. Our current plan is to attend class in person beginning September 14+, but a number of factors could cause this to change. There are some important points to note:
- Should we come back, and myself or the class be exposed such that a group quarantine is necessary, the course is set up for us to transition right back to how we conducted ourselves at the beginning of the semester.
- Should we end up online all semester, then you will be used to the format here hopefully in the early weeks.
- **More important than any class, however, are your health and safety.** The class is set up to have asynchronous lecture materials and synchronous class meetings. However, the course can be taken at any time as completely online should the need arise, should someone be high-risk and/or uncomfortable with in-person instruction (I completely understand and will work with you), etc.
  - **Related to the above and very important:** Students in the course consent to the audio/video recording of synchronous online and in-person class sessions. Students consent to the audio/vido recording of the Monday/Wednesday office hour sessions. If you have privacy concerns regarding your name and likeness, we can discuss how to properly adjust zoom settings, etc. so you will feel comfortable in the course.

Storm mitigation plans: Since pandemics aren’t enough during 2020, we have to also consider that storm delays and evacuations are a reality of living on the coast of the Southeastern U.S. As such, we have the following dates as a potential storm makeup day for the Spring semester: Saturday, September 12, Sunday, September 13, Saturday October 17, Sunday, October 18. These will be utilized in the event of the closure of our campus to cover missed class-meeting material. I have extensive lecture notes prepared for every lecture this semester and will be able to provide notes and lectures both in the event of evacuations. You will be notified via email as soon as such mitigation plans are put into place and, of course, given the nature of these types of delays, I will work with you to ensure that the class gets the necessary content and that exam schedules are adjusted appropriately, in a manner consistent with college policy. Should you find yourself in unusual circumstances during such an incident, please reach out to me as soon as you are able. I will work with you to make sure you get the content you need. Please trust that given the disruption such events cause, I will adjust course workload accordingly as well.

Building an inclusive learning environment: Chemistry is for everyone and chemistry is carried out to magnificent heights by everyone. This is a classroom environment in the same spirit. Each and every one of you matters as an individual. I welcome you to email me your name and preferred gender pronoun choices this semester so that I can communicate with you in the manner you wish.

Mental Health and Wellbeing: At the college, we take every students’ mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). And if you find yourself experiencing any mental health challenges (for example, anxiety, depression, stressful life events, sleep deprivation, and/or loneliness/homesickness) please consider contacting either the Counseling Center (professional counselors at http://counseling.cofc.edu or 843.953.5640 3rd Robert Scott Small Building) or the Students 4 Support (certified volunteers through texting “4support” to 839863, visit http://counseling.cofc.edu/ct/index.php, or meet with them in person 3rd Floor Stern Center). These services are there for you to help you cope with difficulties you may be experiencing and to maintain optimal physical and mental health.

Attendance: Attendance is strongly encouraged! Lectures may include material that is not in the text and you will be responsible for all material covered in lectures and in your text on exams and problem sets. You must take each exam as scheduled. I will not be recording attendance for grading purposes and the WA grade is not operative this semester. Given the challenges of our current time, I will have all lecture material available asynchronously should circumstances require it.
however, I want to express that your attendance is part of the experience of the course. It will make those participation points easier too. Even in our remote/distanced setup, the learning of organic chemistry is a communal process where discussion and problem-solving drive mastery. Your contributions to this matter, so please prioritize being there (as in, attending the Zoom sessions at our schedule class time)! Should I become concerned about a lack of keeping up with the course, I will reach out to you on a case-by-case basis.

**Students with Disabilities:** Please contact me and stop by my office hours (as early as possible in the semester) if you have been approved to receive accommodations through SNAP. I will be working to ensure that my face is visible through all recorded material so that students who may need to lip-read are able to do so. Please consult the Center for Disability Services website for more information: [http://disabilityservices.cofc.edu](http://disabilityservices.cofc.edu)

**OAKS:** OAKS gradebook will be used to communicate student assessment throughout the semester. Grades will not be communicated over email under any circumstances as this is a violation of FERPA. OAKS will be used additionally to communicate with students regarding exam dates, important links for course content (Zoom, Kaltura, posted notes), and any changes to the format, scheduling, and/or any other facet of the class.

**Email and contact:** I may need to email the class list should changes to the course be required or other circumstances arise. I will frequently email the classlist about course materials and with announcements. Email is considered an official communication method at the College of Charleston, and all students are expected to frequently if not daily check their official CofC email account to ensure that no announcements or messages regarding this course (or any other for that matter) are not missed. With regard to extenuating circumstances, please contact me as soon as you are able, and in advance if at all possible.

**Academic Integrity:** Many instances of academic dishonesty arise from students feeling overwhelmed in a course or by external pressures. College can be an overwhelming time, and if you are feeling this way about my class, please contact me! I would much rather work with a student at office hours and/or by appointment than see them compromise their academic values. The results are upsetting for all involved. As such, I will strictly enforce academic honesty and integrity in all facets of this course. The course is conducted under the Honor Code of the College of Charleston. You are responsible for reading, understanding, and strictly adhering to this policy, as am I. For more information, please see the College’s policy information at [http://deanofstudents.cofc.edu/policies-and-procedures/honor-code-and-code-of-conduct.php](http://deanofstudents.cofc.edu/policies-and-procedures/honor-code-and-code-of-conduct.php) and the Department of Chemistry and Biochemistry’s policy at [http://chemistry.cofc.edu/about/policies/index.php](http://chemistry.cofc.edu/about/policies/index.php).

To be more specific, it is my expectation that you will only submit your own work, and that, excepting where specified explicitly, you will have been the only person to have done that work. This means the use of websites that provide for-pay answers such as Chegg, CourseHero, some aspects of Clutch Prep, and including anything remotely similar to them is expressly prohibited. The use of such services constitutes an Honor Code violation and will be strictly dealt with as such. You are not to obtain old exams from peers, or consult others during exams or the completion of graded material (expecting where explicitly specified). Should it become clear that cheating is occurring in any aspect of the course, I reserve the right to make substantial changes to prevent such actions from further occurring.

**Electronic devices and online etiquette:** This is a semester under new circumstances in which we will all be communicating via online media and in text form via email, class documents, and discussion boards. Remember to maintain some professionalism in your interactions (I will do the same). Be forgiving please (of each other and me!) if something appears to be communicated in a way that may not have been intended or in how you respond if you observe a mistake. I hold mistakes in high regard in problem-solving. Be sure to check and re-read what you write before sending or posting it, and try use specific examples that refer to notes or your textbook when posing questions – that way myself and your peers will be better equipped to help out. We will have a respectful, inclusive, and I think really fun learning environment, but we do all bear some responsibility in maintaining it. I know I can count on all of you.