Organic Chemistry II Syllabus

Fall 2026

CHEM 2312 A - 3 credit hours

MWF 8:25AM – 9:15AM in Molecular Science and Engineering (MoSE) G011

Instructor Information

Instructor	Email	Office Hours & Location
Prof. Justin Kim Office: MoSE 2241A	jkim4172@gatech.edu	Friday TBD, MoSE 2241A

Teaching Assistant(s)	Email	Office Hours & Location
TBD	TBD	TBD
TBD	TBD	TBD
TBD	TBD	TBD

PLUS Leader		
TBD	TBD	TBD

General Information

Description

CHEM 2312 LS is the second semester course in Organic Chemistry directed towards students with career paths in the Physical Sciences. This course builds on key concepts of structure and reactivity found in first semester Organic Chemistry (CHEM 2311), with a focus on the expansion of reaction types, reaction mechanisms, and synthesis of organic molecules. Rather than focus on memorization, rational approaches to understanding reaction pathways will be presented based on first principles (orbital interactions, electronegativity, acidity, etc.) that will provide the student with a logical framework of organic reactivity.

Organic Chemistry II is a class that has a lot of material, but it is centered around a few key concepts. Key to success in this class is keeping up on the topics and not getting behind. The class will continually build on itself and will use elements from 2311. For reviewing material from 2311, Dr. Michael Evans has a great set of lectures on YouTube for reference: https://shorturl.at/tB8LL

Lectures In-Class

Lectures will be given in person in MoSE G011. In the event of an excused absence, a recorded lecture may be provided upon request. Skeleton notes for each class will be uploaded to Canvas in the Handouts section, which will be completed during class time. Slides covered during each class (with annotations) will be uploaded to Canvas afterwards in the Handouts section.

Recitation Section

An optional weekly recitation section will be held on TBD. These sections will be recorded and uploaded to Canvas along with the discussed problems and answer key.

Course Topics

Topic 1: Short review of key concepts from CHEM 2311

Topic 2: Conjugation, aromaticity, and pericyclic reactions (Chapters 16 and 17)

Topic 3: Aromatic Substitution Reactions (Chapter 18)

Topic 4: Aldehydes and Ketones (Chapter 19)

Topic 5: Carboxylic Acids and Derivatives (Chapter 20)

Topic 6: Enols and Enolates (Chapter 21)

Topic 7: Amines (Chapter 22)

Topic 8: Organometallics (Chapter 23)

Topic 9: Synthetic Polymers (Chapters 27)

Pre- &/or Co-Requisites

CHEM 2311 or similar first semester organic chemistry course.

Course Objectives and Learning Outcomes

By the end of this course, you will be able to:

- Predict relative reactivities or organic molecules based on first principles
- Identify frontier orbitals involved in elementary reaction steps
- Develop an intuitive understanding of organic reaction mechanisms and arrow pushing
- Design syntheses of target organic molecules from provided molecular building blocks
- Analyze structures of biological polymers

Course Requirements & Grading

Assignment	Weight
Problem Sets (3)	15%
In-Class Exams (3)	60%
Final Exam	25%

Midterm Exams

Exams will take place in class during the allotted class period. All information required for exams will be supplied. Reference to texts or other documents during exams is strictly forbidden.

- **Exam 1 - TBD**
- **Exam 2 - TBD**
- **Exam 3 - TBD**

Final Exam

The final exam will take place in TBD at **TBD**. The final exam will cover all of the topics from the semester with questions similar in style to the midterms.

Problem Sets

Problem Sets will be due two classes prior to each exam and will be graded by the beginning of the following class to permit time for review before the exam. Problem Sets will consist of multiple-choice and free response sections. Problem Sets will be downloaded from Gradescope/Canvas and solutions uploaded to Canvas. Refer to the Gradescope handout on Canvas for specific details on this process. Additional problems will be recommended from the book for each topic but are not to be turned in and will not be graded.

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:

A	85-100%
B	72-84%
C	60-71%
D	50-59%
F	0-49%

While these cutoffs are guaranteed, adjustment to the lower range or curves on Exams may be applied.

Regrades

To submit an exam for a regrade, please submit a regrade request through Gradescope, providing a detailed explanation for why the indicated problems have been graded incorrectly. When a regrade request is made, the entire exam is subject to a regrade for all non-administrative corrections. Students will have 1 week from the date the graded assignment is posted to submit for a regrade.

Course Materials

Course Text

"Organic Chemistry," 5th Edition by David R. Klein; John Wiley & Sons, 2025. The textbook and online WileyPLUS companion are **REQUIRED**. These can be purchased at the bookstore or through various online vendors.

Additional Materials/Resources

While not required, the “Organic Chemistry as a Second Language” books by David R. Klein are good supplements that are reasonably priced. In addition to quality summaries of the material, they offer a number of practice problems with solutions inside the text.

Model kits can be useful for visualizing stereochemistry and understanding strain, though these will not be topics of focus in this semester.

Course Website and Other Classroom Management Tools

Resources for this class will be posted to the Canvas website (canvas.gatech.edu) in the Files section. A course syllabus and calendar can be found there along with lecture slides in the Lecture Slides folder. Homework will be posted at intervals to the Problem Sets folder, and upon completion of an exam, it will be posted along with solutions to the Exams folder. Check the Canvas webpage regularly for updates. Ed Discussion will be available within Canvas for class discussion. Rather than emailing questions directly to the instructor/TAs, please post questions to Ed.

Course Expectations & Guidelines

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ or http://www.catalog.gatech.edu/rules/18/. Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or http://disabilityservices.gatech.edu/, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter.

Attendance and/or Participation

There are no attendance requirements for the class. Students are expected to attend when possible and attendance will likely be critical to success in the course. While information can be gained from the posted handouts and textbook, commentary and questions answered during lectures will provide many more details to help connect the dots. Additionally, during class it is very useful to write independent notes. Organic Chemistry is a topic that is highly visual and requires a significant amount of drawing. Practice during class will assist in developing proficiency in this element to prepare for exams.

There will also not be a formal participation grade for the course, though the course will frequently feature questions for the class to answer. While I will accept voluntary responses, I will at times call upon students to provide their thoughts. As these in-class exercises are not graded, providing incorrect answers are frequently just as valuable as correct ones. If you are having trouble with a problem- likely someone else is, too.

Collaboration & Group Work

Students are encouraged to work together on the problem sets. However, the solutions/answers that are turned in must be the work of each individual. Exams will be solely the product of individuals during the allotted class period.

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Make-up exams will be given as designated by the Institute's General Catalog, Rules and Regulations, Section IVB, and when arrangements have been made prior to the exam that must be missed because of a scheduled Institute activity or in response to an emergency.

Late assignments will be accepted with a 15-percentage point deduction up until the Problem Set solutions have been posted, though this may cause a delay in grading the late assignment. For students who have an excused absence on the day the assignment is due, Problem Sets may be turned in early or submitted electronically to my email.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See http://www.catalog.gatech.edu/rules/22/ for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Student Use of Mobile Devices in the Classroom

Mobile devices are to be turned to vibrate during class and should not be used for non-class purposes. If a call needs to be taken due to emergency, please exit to the room.

Food and Drink in the Classroom

As this class takes place close to lunch time, I do not have an issue with bringing in food or beverages into class so long as they do not create a distraction to the other students in the course.

Resources for Students

In your time at Georgia Tech, you may find yourself in need of support. Below you will find some resources to support you both as a student and as a person.

Academic support

- Center for Academic Success http://success.gatech.edu
    - 1-to-1 tutoring http://success.gatech.edu/tutoring
    - Peer-Led Undergraduate Study (PLUS) https://tutoring.gatech.edu/plus-sessions/
- OMED: Educational Services (https://diversity.gatech.edu/students/office-minority-educational-development)
    - Group study sessions and tutoring programs
- Communication Center (http://www.communicationcenter.gatech.edu)
    - Individualized help with writing and multimedia projects
- Academic advisors for your major http://advising.gatech.edu/

Personal Support

Georgia Tech Resources

- The Office of the Dean of Students: https://studentlife.gatech.edu/services/mental-health-well-being; **404-894-6367**; Smithgall Student Services Building 2nd floor
- Center for Assessment, Referral and Education (CARE) **404-894-3498**; **https://mentalhealth.gatech.edu/**
    - Smithgall Student Services Building 1st floor
    - Students seeking assistance from the Counseling Center or Stamps Psychiatry need to visit CARE first for a primary assessment and referral to on and off campus mental health and well-being resources.
    - *Students in crisis may walk in during business hours (8am-4pm, Monday through Friday) or contact the counselor on call after hours at **404-894-2575 or 404-894-3498**.*
- Students' Temporary Assistance and Resources (STAR): https://studentlife.gatech.edu/content/star-services
    - Can assist with interview clothing, food, and housing needs.
- Stamps Health Services: https://health.gatech.edu; **404-894-1420**
    - Primary care, pharmacy, women's health, psychiatry, immunization and allergy, health promotion, and nutrition

- OMED: Educational Services: http://www.omed.gatech.edu
- **Women's Resource Center: http://womenscenter.gatech.edu/; 404-385-0230**
- **LGBTQIA Resource Center: http://lgbtqia.gatech.edu/; 404-385-2679**
- **Veteran's Resource Center: http://veterans.gatech.edu/; 404-385-2067**
- **Georgia Tech Police: 404-894-2500; http://www.police.gatech.edu**

National Resources

- The National Suicide Prevention Lifeline | 1-800-273-8255
    - Free and confidential support 24/7 to those in suicidal or emotional distress
- The Trevor Project
    - Crisis intervention and suicide prevention support to members of the LGBTQ+ community and their friends
    - Telephone | **1-866-488-7386** | 24 hours a day, 7 days a week
    - Online chat | 24 hours a day, 7 days a week
    - Text message | Text "START" to **687687** | 24hrs day, 7 days a week

Statement of Intent for Inclusivity

As a member of the Georgia Tech community, I am committed to creating a learning environment in which all of my students feel safe and included. Because we are individuals with varying needs, I am reliant on your feedback to achieve this goal. To that end, I invite you to enter into dialogue with me about the things I can stop, start, and continue doing to make my classroom an environment in which every student feels valued and can engage actively in our learning community.