

Course Description

Organic Chemistry IIA CHE 322 is the continuation of Organic Chemistry I (CHE 321), with discussion of the structure, reactivity, and properties of organic compounds introduced in CHE 321. It is an accelerated version of CHE 322 offered in the spring semester, condensed to about six weeks. The material learned from CHE 321 is essential to build upon and develop a deeper understanding of subsequent chapters. Therefore, it is vital to keep up with the coursework and not fall behind.

Prerequisite: A grade of C or better in CHE 321 (or any equivalent course from another university).

Instructor: Dr. Zachary E. Katsamanis
Zoom Personal Meeting ID: 974-208-3323
Email: zachary.katsamanis@stonybrook.edu

Teaching Assistants: contact information and office hours for each TA (and instructor) will be provided on our course website (OSCER) before the semester begins.

Course Structure

The course contains both asynchronous and synchronous components. The lecture sessions and recitation sections are synchronous, regardless of whether you are enrolled for the in-person or online sections. We will use Zoom as the primary platform for the online recitation sections and online office hours. Sign into Zoom at stonybrook.zoom.us using your Stony Brook NetID and NetID password. The key to successfully learning organic chemistry is through working on problems, and by keeping engaged with your peers and instructors. The course is structured to keep you involved daily.

All documents, videos, quizzes, grades and announcements will be delivered in Blackboard (<https://blackboard.stonybrook.edu>) and OSCER (<https://organic.cc.stonybrook.edu/che322-22-summer/>). Both require your NetID and NetID password.

Pre-recorded lecture videos will be posted online. These videos will deliver the main content of the course. Lecture discussion sessions will be held on Mondays, Wednesdays, and Fridays 9:30-11:00am in Frey 100 (the sessions will be streamed live for the online sections). These discussion sessions will generally involve working on problems together based on the content of the pre-recorded videos assigned for that day. Participation during these lecture times will be required through clicker quizzes. Also, lecture quizzes will be given on OSCER that will be based on the videos. See "Lectures" section for more details.

Recitation sections (workshops) will be run by TAs. We have both online and in-person options. For the online sections, we will use Zoom as the meeting platform and OSCER to view problems and upload answers. These workshops will meet Tuesdays and Thursdays. A workshop quiz (OSCER) will precede each workshop, serving as basic problems that will be covered during the scheduled recitation. See "Workshops" section for more details.

Students must be mindful of all course expectations, deliverables, and due dates. All assignments and course interactions will utilize internet technologies. See "Technical Requirements" section for more information. It is always recommended to complete assignments in advance of deadlines in case of technical difficulties or in case they require more time than expected.

Exams will be administered in-person during the lecture session time (final exam extends beyond lecture session time). Online students will have the option to take the exam at Stony Brook University with the in-person class, or at an approved testing center. See "Exams" section for more details.

Required Text and Materials

- *Organic Chemistry, 7th edition*, by Loudon and Parise.
- Molecular Model Kit (**recommended, not required**) - While it is not required to purchase models, they are very useful tools for visualizing molecular structures.

Course Web Sites

The course website (<https://organic.cc.stonybrook.edu/che322-22-summer/>) and the Blackboard supported web site (<https://blackboard.stonybrook.edu>) should be checked on a regular basis. Online quizzes (workshop quizzes and lecture quizzes), course announcements, lecture notes, lecture videos and various other course materials can be found there. Course information, grades, old examinations (posted selectively), and workshop copies can be found on the course websites. The most recent class notice and/or announcement will be emailed through Blackboard. **To receive the most recent email notice and/or announcement through Blackboard, you must check the email account associated with Blackboard.**

There are several features on **Oscerfolio** but we will only use some of them. You can post a note or question using the **Howler**, which is our version of Twitter. You can post short messages to the class and attach a photo taken with your cell phone. You can use the **Howler** to post solutions to problems or to ask a question.

Lectures

Lecture videos will be posted periodically on Blackboard that will be associated with lecture quizzes (which will go live when the videos are posted). A group of videos will be associated with an upcoming lecture session. Instead of one long lecture video corresponding to the textbook sections listed on the schedule, the content will be divided into multiple videos. Lecture sessions will be held MWF at 9:30-11:00am in Frey 100. The sessions will be captured by Echo and streamed live for the online class. It will be recorded to allow for re-viewing. For both the in-person and online lecture sections, we will use OskerClick (our own clicker system) during these sessions for problem solving. They will primarily be used for participation credit. The sessions will be somewhat informal, encouraging students to discuss and ask questions openly. The online section will be able to ask questions using Osker. More will be explained during lecture.

The lecture quizzes will close on the day of a lecture session at 9:00am. **For the first set of lecture quizzes, the due date is extended to Thursday, July 7 at 9:00am.**

Each lecture quiz will be worth **1 lecture point**, based on completion. They will not be graded but should be taken seriously. The clicker quizzes given during each lecture session will be worth a total of **4 lecture points** per session. Clicker points will be earned based on attendance and on correctness.

Workshops

Each workshop (recitation session) will have a workshop quiz associated with it due by 9:00am on Tuesday and Thursday. Two workshop quizzes will go live every Friday at noon. **For the first workshop quiz, the due date is extended to Friday, July 8 at 9:00am.** The workshop quizzes will be graded (full credit for correctly answering 70%, and half credit for correctly answering at least 30%). Full credit for each workshop quiz is worth **2 workshop points**. When you take a graded quiz on Oskerfolio, you will see two buttons. The Save button saves your work, the Submit button submits your work. You can save as often as you like, but the number of submissions is limited. When you submit, the **Oskerfolio** program will tell you which answers are correct, and which are incorrect. Many of the quizzes use **OskerSketch**. It is a chemical drawing program. You press a button to open the **OskerSketch** window, draw your answer in the drawing window, and then hit the save button above the drawing window. When you close the window, you should see your drawn structure saved on the quiz page. When you submit your quiz for grading, **Oskerfolio** will assess your structure. Tutorial videos on how to use OskerSketch (and OskerSyn) will be available on Blackboard.

Attendance and participation (whether in-person or online on Zoom) at your recitation section is required and will be worth **4 workshop points**. During workshop, you will log into Oskerfolio and complete 'Exercise' problems and upload them into the system. TAs will guide you during these workshops and lead discussions.

Official answer keys to workshop quizzes and workshops will not be provided. This is done to encourage attendance at workshops and use of office hours for extra help.

Exams

There will be 3 midterm exams and one final exam. Each midterm exam will be worth 100 points. The final exam will be worth 180 points. **Each midterm exam (July 13, July 25, August 5) will be given during the 90-minute lecture time (9:30-11:00am). The final exam will take place on Monday, August 15 (9:30am – 12:00pm). All exams will be administered in-person. There are no online exams.**

Students registered to the online lecture section have a choice of taking exams at Stony Brook campus or taking them at an approved testing center. A list of testing centers can be found at <http://www.ncta-testing.org/>. On the main page, go to the 'Find a Proctor' tab. Each student that chooses the testing center option is expected to make test center arrangements themselves and pay any fee charged by the center. You must also notify the instructor of the details early in the semester.

Exams will be based on the content of lectures, the textbook chapters, workshops, workshop quizzes, clicker quizzes and lecture quizzes. The questions will be a mix of multiple choice and short answers. You will be allowed to bring to each exam **one 5" x 8" note card**. All the material on this card must be handwritten. No printed or copies of a card will be allowed. Any student who violates this privilege will be charged with academic dishonesty. Molecular model sets will be allowed at exams. Calculators will not be allowed. **You are required to read and understand the exam taking protocol document that will be posted on both Blackboard and Osker at the beginning of the semester.**

There are no make-up exams for the three midterm exams. If you miss a midterm exam due to illness, a religious holiday you observe, or other personal matters, you must notify Dr. Katsamanis by email as soon as possible. An exam grade will be generated for the missed midterm, based on the other two midterm exams and the final exam (scaled to account for differences in class averages). Situations of students who miss more than one exam due to illness will be handled on a case-by-case basis.

All students must take a final exam. Any student missing the final exam must notify Dr. Katsamanis within 24 hours to be eligible for the make-up exam. The make-up exam is primarily used to determine whether the student deserves the grade indicated by the student's average. The make-up final cannot be used to raise a student's grade above that indicated by the midterm exams. **The date for the make-up final exam is 2:00pm on Friday, August 26, 2022.**

Exam Regrade Request Procedure

Although extraordinary care is taken to assure an error free process, grading errors may occur. If you believe there is an error in the grading, then you can request a regrade. You must send an email to Dr. Katsamanis (with "Exam Regrade" in the title of the email) asking which problem(s) to be reviewed and why. Make sure you review the answer key before requesting a regrade. Only request a regrade if you feel there was an error in grading, not because you disagree with the key. **The deadline for each exam regrade is the next exam (i.e. once midterm exam 2 has been given, you can no longer request a regrade for midterm exam 1). Regrade requests will not be considered past the deadline.**

Attendance and Late Work Policy

Attendance and participation are crucial. You cannot make up work in this class, so failing to stay on top of your course responsibilities can quickly spiral into a failing grade for the course.

Late work will not be accepted. If you anticipate being unable to complete assignments for a day or two, you should work ahead to assure timely completion. While we do allow for you to miss some lecture points and workshop points without a grade penalty, it is to your advantage to participate in all of them if possible. We will not excuse students that miss quiz deadlines because of issues that occurred during the final hour. If you choose to complete your work close to a deadline, then you run the risk of missing an assignment submission.

Grades

The total possible number of lecture points will equal 86 points, and the total number of workshop points will equal 77 points. However, you can only earn 60 points max in each category. This means that you can miss some points with no penalty. **Therefore, there will be no make-up lecture or workshop points. Extra points are built in to compensate for absences due to technical issues, illness, or other personal situations.** It is strongly recommended you do not wait till the last hour to submit work to avoid any possible technical issues that may occur.

There are a total of 600 points possible in the course:

- Lecture points (clicker quizzes and lecture quizzes): 60 points
- Workshop points (workshop quizzes and workshop attendance): 60 points
- Midterm exams (100 points each): 300 points
- Final exam: 180 points

Your grade will be determined from using the following scheme.

Points	0	240	270	300	360	396	432	468	504	540
Grade	F	D	D+	C	C+	B-	B	B+	A-	A

Many students ask why we do not use a "curve." The answer is simple. We want everyone to have the opportunity to earn a good grade. With an absolute scale, your grade does not depend upon how well others in the class perform. We would like to give lots of A's and B's, but you must perform well on the exams.

Technical Requirements

This course uses Blackboard and Osker (our website) for the facilitation of communication between faculty and students, submission of some assignments, and posting of grades and feedback. The Blackboard course site can be accessed at <https://blackboard.stonybrook.edu>. If you are unsure of your NetID, visit <https://it.stonybrook.edu/help/kb/finding-your-netid-and-password> for more information. You are responsible for having a reliable computer and Internet connection throughout the term.

The following list details a minimum recommended computer set-up and the software packages you will need to have access to, and be able to use:

- PC with Windows 10 or higher (we recommend a 3-year Warranty)
- Macintosh with OS 10.11 or higher (we recommend a 3-year Warranty)
- Latest version of Chrome or Firefox; Mac users may use Chrome or Firefox. (A complete list of supported browsers and operating systems can be found on the My Institution page when you log in to Blackboard.)
- High speed internet connection
- Smart phone or camera that allows you to photograph your work on paper and upload to Osker or a graphics drawing tablet to use during your scheduled recitation/workshops.
- Ability to download and install free software applications and plug-ins (note: you must have administrator access to install applications and plug-ins).

For all online interactions:

- Headphones/earbuds and a microphone (you will not get credit for workshop participation if you do not have a microphone. Participation by typed text alone is not sufficient.)
- **Webcam (it is advantageous if we can see you during workshop discussions).**

Technical Assistance

If you need technical assistance at any time during the course or to report a problem with Blackboard you can:

- Phone: 631-632-9800 (client support, Wi-Fi, software and hardware)
- Submit a help request ticket: <https://it.stonybrook.edu/services/itsm>

If you are on campus, visit the Walk-Up Tech Support Station in the Educational Communications Center (ECC) building

Extra Help

We provide considerable help to all students taking the course. You should take full advantage of the TAs' office hours. They go above and beyond to provide help to our students. Our TAs will be available online often as well. The TAs are very knowledgeable with the course content, but they are not experts on it. They are here to help you understand difficult concepts and should not be held accountable for any errors they may make. If you feel you need additional help, there are various independent tutoring services available. You may wish to check out these various services. However, none of these services are endorsed by us and should never be viewed as a substitute for hard work.

Responsibilities

Each student is responsible for knowing all procedures and course expectations detailed in this document, in other documents, on the websites or those announced in lecture. Failure to attend or view a lecture is not an excuse for not knowing what was presented or announced. If you miss a lecture, it is your responsibility to find out what transpired.

University Policies

Student Accessibility Support Center Statement:

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: <https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities> and search Fire Safety and Evacuation and Disabilities.

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Important Note: Any form of academic dishonesty, including cheating and plagiarism, will be reported to the Academic Judiciary.

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students'

ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Course Policies

Understand When You May Drop This Course:

It is the student's responsibility to understand when they need to consider withdrawing from a course. Refer to the Stony Brook Academic Schedule for dates and deadlines for registration: http://www.stonybrook.edu/commcms/registrar/calendars/academic_calendars.

- [Undergraduate Course Load and Course Withdrawal Policy](#)
- [Graduate Course Changes Policy](#)

Incomplete Policy:

Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact Dr. Katsamanis for approval as far in advance as possible.

Course Materials and Copyright Statement:

Course material accessed from Oser, Blackboard, or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.

Online Communication Guidelines and Learning Resources:

Maintain professional conduct both in the classroom and online. The classroom is a professional environment where academic debate and learning take place. We will make every effort to make this environment safe for you to share your opinions, ideas, and beliefs. In return, you are expected to respect the opinions, ideas, and beliefs of other students—both in the face-to-face classroom and online communication. Students have the right and privilege to learn in the class, free from harassment and disruption. The course follows the standards set in the Student Code of Conduct, and students are subject to disciplinary action for violation of that code. If your behavior does not follow the course etiquette standards stated below, the grade you receive for a posting may suffer. We reserve the right to remove any discussion messages that display inappropriate language or content.

Online Etiquette:

- Offensive language or rudeness will not be tolerated. Discuss ideas, not the person.
- Avoid cluttering your messages with excessive emphasis (stars, arrows, exclamations).
- If you are responding to a message, include the relevant part of the original message in your reply, or refer to the original post to avoid confusion.
- Be specific and clear, especially when asking questions.
- Use standard punctuation and capitalization. Using all UPPERCASE characters gives the appearance of shouting and makes the message less legible.
- Remember that not all readers have English as their native language, so make allowances for possible misunderstandings and unintended discourtesies.

Online Classes Require Better Communication:

For those in the online sections, it is important to remember that we will not have the non-verbal cues that occur in a face-to-face classroom. We cannot see the confused, frustrated, or unhappy expressions on your face if you encounter problems. You **MUST** communicate with us so that we can help. To make the experience go smoothly, remember that you are responsible for initiating more contact, and being direct, persistent, and vocal when you do not understand something.

Learning Objectives in Organic Chemistry

Two fundamental learning objectives of organic chemistry are:

1. The knowledge of organic chemistry. That is, what we currently know about the structure, dynamics, and synthesis of different molecular entities and how this knowledge is interpreted in terms of modern theories. This is the stuff or facts of organic chemistry.
2. The application of the above knowledge to the solution of complex problems in organic chemistry. This is a more important learning objective because problem solving skills developed in organic chemistry can be transferred to problem solving in other fields such as medicine.

Two other learning objectives of organic chemistry introduced in the course but not explicitly evaluated on exams are the following:

3. The role organic chemistry has played in the development of our modern society.
4. The development of team skills to solve complex problems.

Exam questions for evaluating learning objectives 1 and 2.

Learning Objective 1. The knowledge of organic chemistry is often evaluated using multiple choice questions such as the following:

- (a) Choose the order that has the following structures (compounds) correctly arranged with respect to some physical or chemical property such as boiling point, solubility, acidity, reactivity, etc.
- (b) Choose the major product of the following reaction.
- (c) Choose the reactant and reagents that would give the following compound.
- (d) Choose the compound most consistent with the following data.

The knowledge of organic chemistry is also evaluated using short answer questions. An advantage of short answer questions is that they require a written answer rather than a selection from a list. Some examples are the following:

- (a) Give the major product of the following reaction.
- (b) Give reactants and reagents for performing the following transformation.
- (c) Give the correct name (structure) of the following structure (name).

Learning Objective 2. The application of the knowledge of organic chemistry to the solution of complex problems must be accomplished using written rather than multiple choice questions. Common questions are the following:

- (a) Give the structures of compounds A-E consistent with the following observations.
- (b) Using the curved arrow formalism show how the bond making and bond breaking occurs in the following transformation.
- (c) Show how the following compound could be prepared from reactants and reagents containing four carbon atoms or less. This problem develops skills of working a problem backwards.

Tentative schedule for CHE 322

Date	Lecture Videos and Sessions (MWF) Quizzes normally due 9am on the day of the associated lecture session.	Workshops (Tu Th) Quizzes normally due 9am on the day of the associated workshop session.
July 6	Ch. 15 (15.1, 15.2, 15.3, 15.4, 15.6): Conjugation, synthesis of dienes and reaction of dienes Lec Videos/Quizzes: 1 – 4	
July 7		WS1 – Conjugation, synthesis of dienes and addition reactions of dienes
Note: For the first week, lecture quizzes 1 – 3 will be due by Thursday, July 7 instead of July 6 but you should strive to have viewed videos 1 – 3 before the first lecture session on July 6. Also, workshop quiz 1 will be due by July 8 instead of July 7.		
July 8	15.7: Aromaticity Ch. 16 (16.1-16.5): Electrophilic aromatic substitution Lec Videos/Quizzes: 5 – 7	
July 11	17.1, 17.2: Allylic and benzylic reactivity 18.1-18.4: Nucleophilic aromatic substitution Lec Videos/Quizzes: 8 – 9	
July 12		WS2 – Electrophilic aromatic substitution and allylic reactions
July 13	Exam 1: 9:30-11:00am	
July 14	<i>Material to prepare for WS3 based on July 15 lecture session videos, shown below.</i>	WS3 – Intro to carbonyl additions
July 15	19.1-19.11A (exclude 19.3), 19.15, 20.10: Intro to carbonyl additions, hemi-acetals and acetals Lec Videos/Quizzes: 10 – 11	
July 18	Finish Ch 19: 19.11B, 19.12, 19.13, 19.14: acetal protecting group, imines, enamines, and Wittig reaction 20.1-20.7 (exclude 20.3): Intro to carboxylic acids Lec Videos/Quizzes: 12 – 14	
July 19		WS4 – More carbonyl additions & intro to carboxylic acids
July 20	Finish Ch 20 (20.8, 20.9, 20.11): Fischer esterification and decarboxylation Ch 21 (21.1, 21.2, 21.3, 21.5, 21.6, 21.8): Carboxylic acid derivatives Lec Videos/Quizzes: 15 – 16	

July 21		WS5 – Reactions of carboxylic acid derivatives
July 22	Finish Ch 21 (21.7, 21.9): Hydrolysis and reduction of carboxylic acid derivatives Lec Video/Quiz: 17	
July 25	Exam 2: 9:30-11:00am	
July 26	<i>Material to prepare for WS6 based on July 27 lecture session videos, shown below.</i>	WS6 – Intro to enolate chemistry
July 27	Begin Ch. 22 (22.1-22.3, 22.8A-C): Intro to enolates. Lec Videos/Quizzes: 18 – 19	
July 28	<i>Material to prepare for WS7 based on July 29 lecture session videos, shown below.</i>	WS7 – Claisen and aldol condensations
July 29	22.4, 22.6: Claisen and aldol condensations Lec Videos/Quizzes: 20 – 21	
August 1	22.9-22.12: Conjugate addition Begin Ch 23 (23.1-23.8, exclude 23.4): Amine basicity and amine alkylation Lec Videos/Quizzes: 22 – 23	
August 2		WS8 – Conjugate addition, amine basicity, and amine alkylation
August 3	Finish Ch 23 (23.9-23.11): Amine preparation and reactions of diazonium ions Lec Videos/Quizzes: 24 – 25	
August 4		WS9 – Preparation of amines, and reactions of diazonium ions
August 5	Exam 3: 9:30-11:00am	
August 8	18.5, 18.6: Organometallic chemistry Begin Ch 24: 24.1-24.4: structure and naming of monosaccharides Lec Videos/Quizzes: 26 – 27	
August 9		WS10 – Organometallic chemistry, and intro to carbohydrates
August 10	Finish Ch 24 (24.5-24.11, exclude 24.8A,C): Reactions of carbohydrates, and disaccharides Lec Videos/Quizzes: 28 – 29	
August 11		WS11 – More carbohydrates, and some review
August 12	Review Lecture quiz: 30 (no associated video)	
August 15	Final Exam – 9:30am-12:00pm	

Student Resources

Academic and Major Advising (*undergraduate only*): Have questions about choosing the right course? Contact an advisor today. Phone and emails vary-please see website for additional contact information; website: <https://www.stonybrook.edu/for-students/academic-advising/>

Academic Success and Tutoring Center (*undergraduate only*): <https://www.stonybrook.edu/tutoring/>

Amazon @ Stony Brook: Order your books before classes begin. Phone: 631-632-9828; email: Bookstore_Liaison@stonybrook.edu; website: <http://www.stonybrook.edu/bookstore/>

Bursar: For help with billing and payment. Phone: 631-632-9316; email: bursar@stonybrook.edu; website: <http://www.stonybrook.edu/bursar/>

Career Center: The Career Center's mission is to support the academic mission of Stony Brook University by educating students about the career decision-making process, helping them plan and attain their career goals, and assisting with their smooth transition to the workplace or further education. Phone: 631-632-6810; email: sbucareercenter@stonybrook.edu; website: <http://www.stonybrook.edu/career-center/>

Counseling and Psychological Services: CAPS staff are available by phone, day or night. <http://studentaffairs.stonybrook.edu/caps/>

Ombuds Office: The Stony Brook University Ombuds Office provides an alternative channel for confidential, impartial, independent and informal dispute resolution services for the entire University community. We provide a safe place to voice your concerns and explore options for productive conflict management and resolution. The Ombuds Office is a source of confidential advice and information about University policies and procedures and helps individuals and groups address university-related conflicts and concerns. <http://www.stonybrook.edu/ombuds/>

Registrar: Having a registration issue? Let them know. Phone: 631-632-6175; email: registrar_office@stonybrook.edu; <http://www.stonybrook.edu/registrar/>

SBU Libraries: access to and help in using databases, ebooks, and other sources for your research.

- Research Guides and Tutorials: <http://guides.library.stonybrook.edu/>
- Getting Help: <https://library.stonybrook.edu/research/ask-a-librarian/>

Support for Online Learning: <https://www.stonybrook.edu/online/>