

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
Chemistry 513
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 three main components: lecture, workshop (recitation), and online quizzes (ALEKS).

Lectures will be held on Mondays, Wednesdays, and Fridays 9:00-11:30am in Frey Hall 102. The sessions will include delivering the main content of the course and working on problems together. Participation during these lecture times will be required through clicker quizzes. Occasionally, a **lecture quiz** will be assigned (on ALEKS) that will precede the lecture based on the reading assignment. See "Lectures" section for more details.

Recitation sections (workshops) will be run by TAs. These workshops will take place on Tuesdays and Thursdays in Frey 119. Students will work on more advanced problems in groups during workshop. Both in-person and online sections are available. See "Workshops" section for more details.

Online quizzes and homework assignments will be administered through the ALEKS platform. The quizzes will be graded, while the homework assignments are for study purposes. See "ALEKS" section for more details.

Students will be primarily assessed by three midterm exams and one final exam. Exams will be administered during the lecture session time. See "Exams" 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.

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.

Required Text and Materials

- **Organic Chemistry, 10th edition**, by McMurry, available for free: <https://openstax.org/details/books/organic-chemistry>
- **Point Solutions subscription.** We will utilize **point solutions anywhere polling** as our clicker system. Sign up and subscribe to Point Solutions (<https://echo360.com/get-started-with-point-solutions/>). After selecting the region, enter your Stony Brook email address and follow the subsequent prompts. The following is a video guide: <https://echo360.com/videos/student-registration-for-blackboard-brightspace-canvas/>

- **ALEKS – Online Access for Organic Chemistry** - click the ALEKS link in the course Brightspace page to begin the registration process. Once you create your account in ALEKS, you will have two options:
 1. ALEKS code: Select this option if you have already purchased your access code from the eCampus Bookstore
 2. Purchase Online: Select this option if you are purchasing ALEKS with a credit card or PayPal account
- **Molecular Model Kit** (*recommended, not required*) - While it is not required to purchase models, they are very useful tools for visualizing molecular structures.

Grades

The course is graded out of 600 points: 480 exam points (four exams) and 120 **coursework** points. These coursework points will be earned from: clicker quizzes, lecture quizzes, ALEKS quizzes, and workshop attendance/participation. The total possible number of coursework points will exceed 120, but you can only earn 120 points max. This means that you can miss some points with no penalty. **Therefore, there will be no excused absences or excused quizzes. Extra points are built in to compensate due to technical issues, illness, or other personal situations. Excusals can only be given in extreme circumstances that result in missing multiple points.** Discuss such situations with the instructor as soon as possible. It is strongly recommended you do not wait till the last hour to submit work to avoid any possible technical issues that may occur. The point system is built in such a way that students who regularly attend lecture and workshop, and complete assignments will easily earn 120 coursework points.

Breakdown summary of the 600 points possible in the course:

- Coursework points: 120 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. On 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.

Course Web Sites

We will use the Brightspace course site (<https://it.stonybrook.edu/services/brightspace>) to post content, grades, and announcements. You can access the Echo recordings of lectures and review sessions, course documents such as powerpoint presentations, workshop pdf files, and exams. The most recent class notice and/or announcement will be emailed through Brightspace. **To receive the most recent email notice and/or announcement through Brightspace, you must check your Stony Brook email account.**

Online quizzes, homework and workshop assignments accessible on the ALEKS platform.

Lectures

Prior to each lecture, students will be expected to read the assigned sections in the textbook. Lecture sessions will be held MWF at 9:00-11:30am in Frey Hall 102. The sessions will be recorded by Echo to allow for re-viewing. **The lectures will not be live steamed.** Students are expected to physically attend lectures. We will use clicker quizzes during these sessions for problem solving. The sessions will be somewhat informal, encouraging students to discuss and ask questions openly.

Several clicker quiz problems will be given during each lecture session. Clicker points will be earned based on attendance and on correctness, with a maximum of **4 coursework points** per session. You earn 2 points for simply answering every clicker quiz problem. The other 2 points are earned based on the percentage of clicker problems answered correctly.

Occasionally, a **lecture quiz** will be assigned that will be due prior to a lecture. This will be accessed on ALEKS. These lecture quizzes will not be graded for correctness. You will earn coursework points for simply completing the quiz. The attempt must be sincere to earn points. The number of points designated for each lecture quiz will vary.

Workshops

Attendance and participation (whether in-person or on Zoom) at a recitation session is required and will be worth **4 coursework points**. During workshop, you will complete a set of problems in a group. TAs will guide you during these workshops and lead discussions.

If you are enrolled in an online recitation section, you must have a microphone and webcam turned on to receive the full coursework points. This is part of your attendance/participation grade.

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

ALEKS

We will primarily use ALEKS to administer the graded quizzes and corresponding homework assignments. The quizzes are graded, but they are non-adaptive. There will always be a set number of problems for students to complete. Each student will experience a different quiz. While each quiz will contain the same types of problems, the specific examples will be different. **You will be given five attempts per quiz.** The second attempt (and third attempt) will only involve problems you answered incorrectly and give you an opportunity to improve your overall score. Each quiz will be worth **4 coursework points** (full credit for earning 80%, 3 points for earning 60%, 2 points for earning 50% and 1 point for earning at least 25%). Most of these problem types will involve drawing a structure.

When a quiz is posted, a corresponding homework assignment will also be posted that will contain problems covering the same content. The types of problems on the homework will often be the same as those on the quiz. These homework assignments will not count towards your grade and are not required. **However, we strongly recommend completing the homework assignment prior to its corresponding quiz.** The homework assignments provide great feedback and help for each problem. You can also redo a problem type as many times as you want, with a different specific problem generated each time.

All the quizzes (and homework assignments) that cover material for an exam period will be made available at the same time to allow students to work ahead. Each quiz will be numbered along with its corresponding homework assignment (e.g. Quiz 1 and HW 1). Please pay attention to the deadlines for each quiz. They will vary, but the deadline time will always be set to 8:00am. **It is strongly recommended you do not wait till the last hour to submit work to avoid any possible technical issues that may occur.**

When you first enroll into ALEKS, you will be given an assignment called **Knowledge Check**. You are required to complete this to access the rest of the ALEKS content. This will not be graded, and you can answer every question incorrectly to move on. **However, we strongly encourage you to take this assignment seriously.** Redo every problem you answer incorrectly until you understand it. This quiz covers topics from organic chemistry I that are vital for students to succeed in organic chemistry II.

Exams

There will be 3 midterm exams and one final exam, all given during the scheduled lecture session time. Each midterm exam will be worth 100 points. The final exam will be worth 180 points. **Each midterm exam (July 16, July 28, August 8) will be given during the first 90-minutes of lecture time (9:00-10:30am). The final exam will take place on Friday, August 15 (9:00 – 11:30am).**

Exams will be based on the content of lectures, the textbook chapters, workshops, clicker quizzes and any content from ALEKS. 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 Brightspace 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 29, 2025.**

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 ensure timely completion. While we do allow you to miss some coursework 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.

Technical Requirements

This course uses Brightspace and ALEKS for the facilitation of communication between faculty and students, submission of some assignments, and posting of grades and feedback. 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 Brightspace.)
- High speed internet connection
- Headphones/earbuds
- **Webcam and microphone (for those enrolled in an online recitation section, you will not receive credit for workshop if you do not have your webcam turned on).**
- Smart phone or camera that allows you to photograph your work on paper and upload.
- Ability to download and install free software applications and plug-ins (note: you must have administrator access to install applications and plug-ins).

Technical Assistance

If you need technical assistance during the course or to report a problem with Brightspace:

- 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

ALEKS Tech Support:

Hours of Operation:

Sunday: 4:00 PM to 1:00 AM EST
Monday-Thursday: 7:00 AM to 1:00 AM EST
Friday: 7:00 AM to 9:00 PM EST

Phone: [\(800\) 331-5094](tel:8003315094)
Online: [Submit a Support Request](#)
Chat: [Chat with a Representative](#)

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. Prior to each exam, our TAs will host a review session. 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 are 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.

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 Sessions (MWF) It is recommended you read textbook sections prior to each lecture | Workshops (Tu Th) ALEKS Quiz Deadlines (8:00am) |
|--|--|---|
| Note: it is your responsibility to pay attention to ALEKS quiz deadlines. We strongly recommend you complete the ALEKS homework and quiz associated to each lecture prior to attending lecture. | | |
| July 7 | Begin ch. 16: Electrophilic aromatic substitution | |
| July 8 | | WS1 – Electrophilic aromatic substitution |
| July 9 | Finish ch. 16 and begin ch. 17: More reactions of aromatic compounds. Intro to alcohols | Quiz 1 deadline |
| July 10 | | WS2 – More reactions of aromatic compounds. Alcohol redox reactions and phenols |
| July 11 | Finish ch. 17 and begin ch. 18: More alcohols and intro to ethers | Quiz 2 deadline |
| July 14 | Finish ch. 18: Ethers and epoxides | Quiz 3 deadline |
| July 15 | | WS3 – Ethers and epoxides |
| July 16 | Exam 1: 9:00-10:30am | |
| July 17 | <i>Material to prepare for WS4 based on July 18 reading assignment shown below.</i> | WS4 – Intro to carbonyl additions |
| July 18 | Begin chapter 19: Intro to carbonyl additions, hemi-acetals, and acetals. | Quiz 4 deadline |
| July 21 | Finish ch. 19 and ch. 20: Acetal protecting group, Wittig reaction, and carboxylic acids | Quiz 5 deadline |
| July 22 | | WS5 – More carbonyl additions & intro to carboxylic acids |
| July 23 | Begin chapter 21: Carboxylic acid derivatives | |
| July 24 | | WS6 – Reactions of carboxylic acid derivatives |
| July 25 | Finish chapter 21: More carboxylic acid derivatives | Quiz 6 deadline |
| July 28 | Exam 2: 9:00-10:30am | |
| July 29 | <i>Material to prepare for WS7 based on July 30 reading assignment shown below.</i> | WS7 – Intro to enolate chemistry |
| July 30 | Chapter 22: Enolate chemistry | Quiz 7 deadline |
| July 31 | <i>Material to prepare for WS8 based on August 1 reading assignment shown below.</i> | WS8 – Intro to condensation reactions |
| August 1 | Begin chapter 23: Claisen and aldol condensations | Quiz 8 deadline |

| | | |
|-----------|---|---------------------------------------|
| August 4 | Finish ch. 23 and begin ch. 24: Conjugate addition, and amines | Quiz 9 deadline |
| August 5 | | WS9 – Carbonyl condensation reactions |
| August 6 | Finish chapter 24: More amines | Quiz 10 deadline |
| August 7 | | WS10 – Amines |
| August 8 | Exam 3: 9:00-10:30am | |
| August 11 | Begin chapter 25: Structure and naming of monosaccharides, and reactions of carbohydrates | Quiz 11 deadline |
| August 12 | | WS11 - Carbohydrates |
| August 13 | Finish chapter 25: Disaccharides Review | Quiz 12 deadline |
| August 14 | | WS12 – Review |
| August 15 | Final Exam – 9:00-11:30am | |

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 ALEKS, Brightspace 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.

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/>