Chemistry 224-001 – Fall 2017 – Syllabus

Course Chemistry 224, Organic Chemistry B, 3 Credits, Lecture and discussion
Prerequisites Chemistry 223 or 221 – a student missing a prerequisite may be withdrawn at any time
Lecture MWF 8:15 - 9:05 am Section 224-001
Discussion You must attend the section for which you are registered: Tuesdays 1:00 or 2:30pm

Instructor Contact Information

Dr. Sandra Helquist (Ph.D.) Flanner Hall 200B is a shared office, please knock and wait for a response
Email policy: to receive a response, either use the email function in Sakai to send to Instructor (via select recipients) and leave subject line blank OR use your Loyola email address and put only "Chem 224-001" in the subject line, send to shelquist@luc.edu; in most cases I will be able to respond within 24 hours during the week when I am on campus.
Office Hours policy: just show up! You are welcome to stop by at any time to see if my door is open and check my posted schedule. Occasional extra hours may be announced in class, and online office hours are available by prior appointment via Zoom (link will be posted/emailed, use your Loyola login and password).
For regular office hours, just show up with your questions anytime during:

Mondays, Damen Student Center 1st floor court, 9:30-11am
Flanner 200 suite: Tuesdays 11am-12:45pm; Wednesdays 9:30-11am; Fridays 10:30am-noon

Course Materials

Organic Chemistry, Wade, 8th edition, Prentice Hall, hard copy or eText (Required)
Highly recommended: WileyPlus with Orion online access (see additional information on our Sakai course site).
Organic Chemistry II: As a Second Language, Klein; use of a molecular modeling kit and the solutions manual for the textbook is also recommended; the books are also on reserve at the library. Daily access to your Loyola email account and Loyola's Sakai site sakai.luc.edu are also required to receive communications from the instructor and to access course materials, assignments, scores. **Copyright/Intellectual Property reminder:** course materials provided by your instructors at Loyola may not be shared outside any course without the instructor's written permission.

Course Content & Objectives

Content-specific Objectives Topics will include: conjugated π systems, aromatics, carbonyl compounds, amines, carboxylic acids and their derivatives, carbohydrates, amino acids, biopolymers. The student should learn how to:

1. apply material (principles, concepts, skills) learned in the first semester course (nomenclature, structure, reactions, mechanisms, spectroscopy, synthesis) to the study of second semester topics.
2. identify the various classes of organic compounds, their methods of preparation, and typical reactions.
3. name and draw specific organic compounds.
4. postulate a *logical* reaction mechanism for organic reactions.
5. discriminate among relative stabilities of reaction intermediates.
6. plan and write out multi-step syntheses using known functional group transformations, including syntheses of polyfunctional organic compounds.
7. name, draw and interpret the 2- and 3-dimensional structures of important biopolymers, and techniques for their synthesis and characterization.
8. analyze and interpret data from various instruments used in separating and identifying organic compounds including: IR, NMR, UV-vis and MS.

IDEA Objectives These objectives include learning outcomes beyond this course and will apply across multiple courses and disciplines as you develop as an independent learner at Loyola. These have been selected by the Organic faculty:

1. Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)
2. Learning to *apply* course material (to improve thinking, problem solving, and decisions)
3. Learning how to find, evaluate, and use resources to explore a topic in depth
4. Learning to *analyze* and *critically evaluate* ideas, arguments, and points of view

Expectations

I expect you to show up on time for each class and to come prepared, having kept up with the material by working problems and having read ahead in the textbook. I expect you to use class and office hour time to learn the material by engaging with classmates and asking questions. Make-up assignments are not available for this course. You will need to contact a classmate for notes, sections/topics covered if you miss a class. Be courteous: save your electronic messaging for after class. Plan your schedule so you have at least 10 hours per week outside of class for reading, working problems, asking questions, i.e, studying (learning) the material on a Daily Basis. You may require up to 20 hours per week depending on prior preparation for this course. Make time for this course every day: do not count on cramming on weekends or before exams as you will be much less likely to master the course objectives listed above. If you miss a class for any reason, it is your responsibility to promptly contact a classmate for notes and topics covered.

Accommodations

Students requiring accommodations must provide appropriate documentation from the University and meet with the instructor to discuss arrangements. Accommodations are provided after receiving documentation and allowance of a reasonable time frame for implementation: minimally, one week in advance of an exam. Accommodations cannot be retroactive. Information for students with disabilities is available at: http://www.luc.edu/sswd/

Academic Integrity

You are encouraged to study with other students in and out of class, however, anything submitted for an individual grade during or outside of class must represent your own knowledge and understanding of the material. Evidence of cheating (for homework, quiz, or exam) will result in, at a minimum, a "zero" on the item and penalty up to failure of the course, as well as referral to the Dean's Office. For the Undergraduate Catalog statement on academic integrity, visit: http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml

Grading Graded assessments (quizzes, exams) will be used to assess your level of mastery of the Course Content and Objectives as listed on the first page of this syllabus, and Course Grades will be assigned based on the quality of achievement you demonstrate on graded assessments. Extra/make-up assignments are not available for this course. Your Chemistry 224 grade will depend on the following: Participation 4% + Quizzes 16% + Exams 80% = Total 100% Letter grades are based on fixed percentages for this course so that all students are graded based on consistent standards. Generally, 85.0% is the lowest A-; 70.0% is the lowest B-; 55.0% is the lowest C-; 40.0% is the lowest D. Cutoffs for plus/minus grades are not published as they will be determined by the overall distribution of course scores.

Participation: The purpose of participation assignments is to help all students keep pace with the class, as well as to inform the instructor and the class of common misconceptions. You will get as much benefit from these assignments as you choose to put forth in your individual effort. There will be 1-3 assignments per week as needed. Assignments will be submitted mostly during class, and occasionally pre- or post-lecture. Most submissions will be electronic but some will require submission of a hard copy. Each assignment will be worth one point, and will be graded based on timely and meaningful completion. Remember, there are no make-up assignments for this course.

Quizzes: The purpose of quizzes in general is for the benefit of the student as a learning tool: use the feedback you receive to adjust your daily studying habits. The purpose of the dropped quiz policy is primarily to account for unavoidable absence by the student: every missed quiz receives a score of zero. No early quizzes, no make-ups! Quizzes will be given individually and/or in groups, in class and/or as take-home activities. Most quizzes will be given in class, and dates/times/content of quizzes may or may not be announced in advance. Keep up! Come to class prepared! The lowest quiz score will be dropped at the end of the term; all remaining quiz scores will be averaged (by percent, so that equal weight is given to each quiz) to obtain the overall quiz contribution to the course grade.

Exams: The purpose of the exams is to assess your individual level of mastery of the Course Content and Objectives. No early exams, no make-ups! Unexcused absence (traffic, weather, oversleeping, forgetfulness, etc) results in a ZERO. Excused absences require documentation of an unforeseeable emergency but do not result in a make-up exam.

- Midterm Exams: 50 minutes, September 20, October 20, November 15, 16% each toward course grade. Organic chemistry material is highly cumulative over 2 semesters: all exams will require application of prior knowledge.
- Final Exam: Thursday December 14th 9-11 am as scheduled by the University, 32% of course grade. The final exam is Mandatory: students who do not take the final will automatically receive a course grade of F.

Exam Procedure: Use of your own models is permitted. Phones, other electronic devices, calculators are not permitted. If seen or heard, will be confiscated along with exam copy and student will be dismissed with a score of zero. Seating arrangements may be altered before or during the exam. Show up early with two items: (1) your Loyola ID, visible on desk to be checked; (2) working pencil(s) or standard blue/black ink pens. All jackets, bags, loose accessories, etc must be left at the front of the classroom. Once the exam is distributed, if you exit the room (quietly, please), for any reason before time is up, your exam is considered complete and will be collected. I will return your midterm exams *during the discussion periods or in office hours* (copies will be kept). Scoring errors must be brought to my attention in person no later than one week after the exams are returned. The final exam cannot be returned.

Homework: Preparation, Practice, Self-Assessment

On quizzes and exams you will be expected to answer questions and solve problems, so you should learn (study) by answering questions and solving problems. When you cannot answer a question correctly on the first attempt, do not dismiss it! Figure out WHAT types of problem it is, WHY you made the mistake, WHY the correct answer is correct, HOW you can recognize and apply the correct concepts and methods for solving that type of problem in the future. Mix up your practice problems as often as possible (ask your study group for help with this). WileyPlus with Orion (see information on Sakai) is an excellent source of practice problems: I will post pre-lecture Mastery-type assignments and suggest skill-building exercises as well. I will continually update the list of textbook problems on Sakai. The end-of-chapter problems include questions that are at or above the level of the most difficult exam questions.

Best Practices & Suggestions

Students often ask me, "How do I get a/an (fill in grade of choice here) in this class?" The answer is simple (see the grading policy for the course), but the process of learning is challenging and can even be uncomfortable as you are pushed to expand the boundaries of your knowledge and abilities. Grades are earned based on how well you demonstrate mastery of the Course Content and Objectives listed on Page 1 of this syllabus: please reread carefully and completely – and ask questions if you are not sure how/when we are working toward these objectives in class. The top grade of 'A' earned by demonstrating complete (not partial) mastery of all (not some/most) of the course material on all (not some/most) of the quizzes and exams. To earn a grade of 'C' you will need to demonstrate good mastery of most (not some) of the course material. Please continue reading for the best suggestions I have from my own experience as a student and as a teacher, scientific research on learning, and the experiences of my mentors, colleagues, and students.

1. Take ownership of your learning. I am here to guide and support your learning, but ultimately I hope that you will decide to be in charge of your own learning in this course. This starts by becoming aware of what you do on a daily basis to meet your goals for achievement in this course and beyond. Most of us improve when we have help to achieve our goals, including keeping up with minimal pre and post-lecture work. Come to office hours and form a study group that meets more than once per week. After that it is up to you to put in individual time, often working through struggles with the material, to master concepts, problem types and strategies at your desired level of performance.
2. Remembering topics is necessary but not sufficient: Understanding the material is crucial but still not sufficient: in this course you are expected to apply your understanding and analyze problems to demonstrate complete mastery of the material on quizzes and exams. If you are curious about how these levels of learning differ, check out this: interactive pyramid depicting Bloom's Taxonomy. You may already have some experience with this distinction from your prerequisite Chemistry courses as well as having learned that simply trying to memorize content does not typically lead to sustained learning. Get curious! It is one thing to know what happens, but it is often more satisfying to know why it happens, and to be able to make predictions from your knowledge. As you continue in your undergraduate coursework, the transitions from 100- to 200- to 300-level courses will include transitions to higher-order thinking skills being emphasized for your learning and assessed in your coursework.
3. Chemistry material, by nature, is highly cumulative. You must have good to excellent understanding of the concepts from the first semester Organic course in order to apply that knowledge as you begin to learn the second semester material. Foundational concepts are still your friends: we will refer back to basic concepts and principles of the first semester material incessantly and relentlessly. Review early and as often as needed – do this in your study groups too.
4. To deal with the highly cumulative nature of the material, the best plan is to study by working problems every day so you are prepared for each class and each new topic covered. Pre-lecture: you are welcome to use the recommended WileyPlus and/or Wade textbook problems to familiarize yourself with the basics of what will be covered in the next class, and bring clarification questions to ask during class. Post-lecture: work enough recommended problems (WileyPlus and/or Wade) so that you can complete any new question on the first attempt without assistance from your notes, book, classmates, tutors, or the solutions manual. Ask yourself each time: what type of problem is this? Break up your studying, know when you have reached your limit for new content and take a break, give yourself time to process and assimilate before moving on to even more new material. In the academic year, plan on 1.5 to 2.5+ hours every day of the week. Falling behind is unacceptable if you wish to fundamentally understand concepts in order to apply them to solve problems and demonstrate mastery of the material.
5. If you are solving problems and asking questions on a Daily Basis, you have already studied for your Exams by learning the course material! Begin to review for each test a few days in advance. You may wish to use the Summary: Reactions of (class of compound), Essential Problem Solving Skills, Essential Terms listed at the end of chapter as a review tool, or to make your own study guides from lecture outlines or quizzes prior to exams.

Other Items

- A link to the official Loyola calendar can be found here: http://luc.edu/academics/schedules/index.shtml
- The Withdraw deadline for the semester is Friday November 3rd. Students can seek assistance with LOCUS procedures from the Department office (Flanner 125), or from academic advising in the Sullivan Center.
- Course Repeat Rule: Effective with the Fall 2017 semester, students are allowed only THREE attempts to pass Chemistry courses with a C- or better grade. The three attempts include withdrawals (W). After the second attempt, the student must secure approval for a third attempt. Read the full policy on this Department website.
- For information about Loyola tutoring in the Sullivan Center, see: http://www.luc.edu/tutoring/
- A tentative Course Schedule is posted in the Sakai Course Materials section and will be updated as needed.
- A list of Homework, Highly Recommended Textbook problems is posted in the Sakai Course Materials section.
- Additional resources will be continually posted and updated on Sakai.

Best wishes for a successful semester. Let me know what I can do to help you achieve your goals in this course.