

Syllabus – General Chemistry A

The purpose of this syllabus is to describe the course, resources, and policies. It is meant help all students understand the expectations and requirements for the course, and it should be used as a reference for questions about policies. When updates to the syllabus are made during the term, a new version will be posted electronically, and all students will be notified.

Course Information

Course: Chemistry 101 – General Chemistry A (3 credits: Lecture & Discussion)

Prerequisites: A satisfactory performance on the Loyola math diagnostic test, completion of Math 117 with a grade of C- or better, or the equivalent. A student missing a prerequisite may be withdrawn at any time.

Time Zone: This syllabus lists dates/times using Chicago local time (U.S. Central Time Zone)

Lectures: Tu/Th 2:30 p.m. – 3:45 p.m. Sullivan Center – Galvin Auditorium

Discussions: You must attend the section for which you registered:

- Wed 1:40 p.m. – 2:30 p.m. Flanner Hall – Room 105
- Wed 2:45 p.m. – 3:35 p.m. Flanner Hall – Room 105

Course Coordinator: Dr. Patrick L. Daubenmire (pdauben@luc.edu)

Chemistry 101 is a multi-section lecture & discussion course with common content and common outcomes across all sections. This course includes a Final Exam during the Common Final Exam Period as scheduled by the University. The Course Coordinator is responsible for consultation and coordination with instructors regarding policies, exam writing, and grading. Your Section Instructor is responsible for communicating with you regarding all course content and policies and is the first and primary person you should contact with questions about all aspects of the course. As needed, all Section Instructors will consult with the Course Coordinator throughout the semester.

Section Instructor: Dr. Zachary Osner

Instructor Contact Information

Office: Flanner Hall – Room 200A

Email: zosner@luc.edu

Email timing:

Feel free to email me questions at any time. All emails must be sent through the student's LUC email address and **MUST** include "CHEM 101" in the subject line. Emails that are sent Monday – Friday between the hours of 8:00 a.m. – 6:00 p.m. will be answered within 12 hours. Emails sent after hours or on Saturday, Sunday, or during breaks will be answered within 48 hours. This policy applies to the Instructor, Teaching Assistant, and Supplemental Instructor.

Office Hours Policy:

My office door will be open per the times listed. For online instruction, join the Zoom link posted for office hours. For in-person instruction, stop by my office per the times listed. Please use this time to if you have extra questions regarding this course. If you are unavailable to meet at the listed times, email me to set up a meeting. Private meetings will be arranged if a time can be determined to meet and are not guaranteed.

Office Hours Schedule:

Online (via Zoom):	Mon	1:00 p.m. – 3:00 p.m.
In-person (Flanner Hall 200):	Tues/Thur	12:30 p.m. – 2:00 p.m.

SI information: TBD

Required Course Materials

- Textbook: Chemistry The Central Science, Brown et. al., 14th edition; eText or hard copy
- ALEKS: class code **VXQF4-UYCCL**
- Loyola email, Sakai (and integrated tools), Zoom, Gradescope & additional software & online resources.
- Scientific Calculator (non-programmable, non-graphing, and independent of another device such as a phone or tablet)

Recommended Course Materials: e.g. Molecular Model Kit, Solutions Manual, etc. (as applicable)

Copyright/Intellectual Property reminder: Course materials provided by your instructors at Loyola, including my materials, may not be shared outside any course without the instructor's **written permission**. Content posted without permission will be in violation of Copyright/Intellectual Property laws.

Course Content & Learning Outcomes

This course is the first in a 2-term sequence of general chemistry. We will focus on building a conceptual understanding of fundamental chemical principles including properties of atoms, molecules, states of matter, and chemical reactions. Students will learn the language of chemistry and develop their skills in scientific problem solving and critical thinking. This will serve as a foundation for further study in chemistry, other sciences and related disciplines.

You will learn to:

- Differentiate types of matter based on their chemical and physical properties (for example, pure substances vs. mixtures, metals vs. nonmetals, ionic vs. covalent vs. metallic, electrolyte vs. nonelectrolyte).
- Use multiple perspectives of matter (macroscopic, particle, symbolic levels) to qualitatively describe and explain characteristics, properties, and relationships of the following: atomic structure, nuclear chemistry, periodicity, molecular structure, chemical bonding, chemical reactions, thermochemistry, aqueous solutions, gases.
- Quantify relationships between variables controlling chemical systems.
- Solve quantitative multistep problems combining multiple concepts within the systems.
- Differentiate among closely related factors, categorize problem types, and select appropriate tools to solve these problems.
- Apply chemical principles to explain natural phenomena

Class Attendance & Course Coverage

You will have the chance to introduce yourself to multiple classmates early in the course. Our actual pace may vary from this schedule: if you miss a class for any reason, it is your responsibility to work through the content, and I also suggest you contact a classmate for further discussion of the topics as you are still responsible for all material covered and assigned. Lectures will be presented live using the dry erase board and Power Point. All lectures will be recorded and can be viewed on Panopto (via Sakai). Slides/handouts/links/animations and other additional resources will be shared on Sakai. To help you stay on track, pre-lecture readings will be posted and continually updated on the Sakai forums page for this course. Required Pre & Post-lecture Homework objectives are assigned and continually updated in ALEKS. ALEKS homework will be posted every Tuesday, Thursday, and Sunday. Tuesday's assignment will be due on Thursday at 11:59 p.m., Thursday's assignment will be due on Saturday at 11:59 p.m., Sunday's assignment will be due on Tuesday at 11:59 p.m. Post-lecture Highly Recommended problems for additional daily practice will be continually updated online. We will not cover every topic in every chapter of the textbook this semester. Focus first on the material that is directly covered in lecture and assigned or recommended. Explore the additional material in the textbook for your own interest and enrichment.

Classroom & Discussion Group Work Guidelines

The classroom is a space designed for learning. My expectations are that all voices will be heard and appreciated in the classroom, and that we will invite each other to engage while recognizing that contributions can take multiple forms.

No early assignments, no make-ups, no exceptions. The purpose of group work is to foster cooperation and communication between students and the instructor to help you learn the material and develop your problem-solving skills at the level you will be expected on exams. The problems worked in discussion are mostly taken from old exams: if you struggle with any part of any question in the group session, make a note of it for your next study session and ask for help. Then keep practicing (studying!) until you can solve similar and related problems on your own: the amount of practice and help required will be different for each of you. All group work assignments will be collected for grading, and I will do my best to discuss the answers in class after the work has been collected. The lowest two assignment scores will be dropped at the end of the semester to account for unavoidable absences (illness, emergency, etc).

Student and Faculty Expectations

I expect you to take ownership of your learning and to use office and SI sessions as learning resources to help you reach your desired level of achievement in the course. For this course, it is anticipated that the average independent working time (outside of class) required to learn the material in order to achieve a minimal passing grade of C- is 1-2 hours per day, every day, but your needs will also vary depending on your prior knowledge and ability to master cumulative concepts in the course material as the semester progresses. What can you expect of me? My primary objectives are to provide you with the tools, environment, encouragement, and support to learn Chemistry. Because the course objectives are based on what students will learn, my teaching techniques include the use of post-lecture homework, active learning and metacognition, to help you maximize your learning. I expect that all of us will work together!

Student Accommodations

Loyola University provides reasonable accommodations for students with disabilities. Any student requesting accommodations related to a disability or other condition is required to register with Student Accessibility Center (SAC), located in Sullivan Center, Suite 117. Professors receive the accommodation notification from SAC via Accommodate. Students are encouraged to meet with their professor individually in order to discuss their accommodations. All information will remain confidential. Please note that in this class, software may be used to record class lectures in order to provide equal access to students with disabilities. Students approved for this accommodation use recordings for their personal study only and recordings may not be shared with other people or used in any way against the faculty member, other lecturers, or students whose classroom comments are recorded as part of the class activity. Recordings are deleted at the end of the semester. For more information about registering with SAC or questions about accommodations, please contact SAC at 773-508-3700 or SAC@luc.edu.

Course Repeat Rule

Students are allowed only THREE attempts to pass a particular chemistry course with a C- or better grade. The three attempts include withdrawals (W). The Department advises to complete a course with a grade of C or C-, and to demonstrate growth in future coursework, rather than to withdraw from a course.

After the second attempt, the student must secure approval for a third attempt. Students must come to the Chemistry Department, fill out a permission to register form or print it from the Department of Chemistry & Biochemistry website: <https://www.luc.edu/chemistry/forms/> and personally meet and obtain a signature from either the Undergraduate Program Director, Assistant Chairperson, or Chairperson in Chemistry. A copy of this form is then taken to your Academic Advisor in Sullivan to secure final permission for the attempt.

Academic Integrity

All students in this course are expected to have read and to abide by the demanding standard of personal honesty, drafted by the College of Arts & Sciences, which can be viewed at:

<https://www.luc.edu/cas/advising/academicintegritystatement/>

A basic mission of a university is to search for and to communicate the truth as it is honestly perceived. A genuine learning community cannot exist unless this demanding standard is a fundamental tenet of the intellectual life of the community. Students of Loyola University Chicago are expected to know, to respect, and to practice this standard of personal honesty. Academic dishonesty can take several forms, including, but not limited to cheating, plagiarism, copying another student's work, and submitting false documents.

Any instance of dishonesty (including those detailed on the website provided above or in this syllabus) will be reported to The Chair of The Department of Chemistry & Biochemistry who will decide what the next steps may be. Evidence of cheating in this course will result in, at a minimum, a score of zero (which cannot be dropped from grade calculations) and penalty up to failure of the course. College policies include that instructors will report incidents of academic misconduct to their chairperson as well as to the Assistant Dean for Student Academic Affairs in the CAS Dean's Office. I will report incidents to the Chemistry & Biochemistry Department for further action(s).

Loyola University Absence Policy for Students in Co-Curricular Activities (including ROTC):

Students missing classes while representing Loyola University Chicago in an official capacity (e.g., intercollegiate athletics, debate team, model government organization) shall be allowed by the faculty member of record to make up any assignments and to receive notes or other written information distributed in the missed classes.

Students should discuss with faculty the potential consequences of missing lectures and the ways in which they can be remedied. Students must provide their instructors with proper documentation i.e., "[Athletic Competition & Travel Letter](#)" describing the reason for and date of the absence.

This documentation must be signed by an appropriate faculty or staff member and it must be provided to the professor in the first week of a semester. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to allow the student to take the examination at another time. (<https://www.luc.edu/athletheadvising/attendance.shtml>)

Students who will miss class for an academic competition or conference must provide proper documentation to their instructor as early in the semester as possible.

Accommodations for Religious Reasons

If you have observances of religious holidays that will cause you to miss class or otherwise effect your performance in the class you must alert the instructor **within 10 calendar days of the first class meeting of the semester** to request special accommodations, which will be handled on a case by case basis.

Other Items

- A link to the official Loyola calendar can be found here: <https://www.luc.edu/academics/schedules/>
- The Withdraw deadline for the semester is on Friday, November 4.
- Loyola is using SmartEvals to provide instructor & course feedback. OIE will send emails near the end of the term.

Class Recording & Content Information

In general lecture, class sessions may be recorded. The following is a mandatory statement for all courses in the College of Arts & Sciences (CAS). We will discuss class norms and standards during the first week and continue the discussion as needed throughout the semester.

Privacy Statement

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

Additional Content, Copyright & Intellectual Property Statement

By default, students may not share any course content outside the class without the informed written consent of the owner of that content. This includes any additional recordings posted by students, materials provided by the instructor, and publisher-provided materials. For example, lectures, quiz/exam questions, book figures/slides, and videos may not be shared online outside the class. In some cases, copyright/IP violations may overlap with breaches of academic integrity. Remember that obtaining consent to share materials is an active process.

Pass/Fail Conversion Deadlines and Audit Policy

A student may request to convert a course into or out of the "Pass/No-Pass" or "Audit" status only within the first two weeks of the semester. For the Fall 2022 semester, students are able to convert a class to "Pass/No-Pass" or "Audit" through Monday, September 12th. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

Health, Safety, and Well-Being On-Campus

Please be familiar with and adhere to all policies and protocols posted on the *Campus Info & Resources* site:

<https://www.luc.edu/healthsafetyandwellbeing/campusinforesources/>

Fall 2022 Classroom Masking Policy

It will remain a principle of this class-section that, out of respect for the health of housemates and others in regular contact with members of our community, in this class we wear masks over nose and mouth at all times we are together in the classroom. The "classroom" includes lecture, discussion, and office hours.

Final Exam

The University sets the schedule for all final exams. The final will be held on:

Thursday December 15th, 7:00pm

Location will be updated on LOCUS when available.

You will have exactly 2 hours to complete the exam. Additional time will not be granted, even if you start late. There will be no make-up final exams given under any circumstance, and the exam will not be given early, either.

Instructors may not reschedule final exams for a class for another day and/or time during the final exam period. There can be no divergence from the posted schedule of dates for final exams. Individual students who have four (4) final examinations scheduled for the same date may request to have one of those exams rescheduled. If a student reports having four final examinations scheduled for the same date, students should be directed to e-mail a petition to Adam Patricoski, Assistant Dean for Student Academic Affairs, CAS Dean's Office (apatricoski@luc.edu).

Universal Absence Accommodation Policy

The purpose of a universal absence accommodation policy is to account for emergency circumstances (e.g., serious illness, caring for a family member, car accident) that require you to be absent from class, while maintaining fairness in grading for students who attend and complete all in-class graded assignments. We believe that class attendance and participation are essential for your success in this class, and that your health is important to us and our shared community. Please use good judgement and stay home if necessary/prudent for your circumstances.

This is the universal accommodation policy for in-class graded assignments:

- A missed in-class discussion due to absence for any reason is already accommodated in the course grading system. Given that only the best twelve in-class discussion worksheets are included in this calculation, two missed discussion worksheets would be the worksheets not included in this calculation, as they would be the lowest (0%) of the fourteen worksheets.
- A missed in-class exam due to absence for any reason is already accommodated in the course grading system. Given that only the best two in-class exams are included in this calculation, a missed exam would be the one not included in this calculation, as it would be the lowest score (0%) of the three exams.

You may provide documentation for an absence, but it is not required. These accommodations are automatically available to all students.

Course Grading System

The standards for each letter grade are listed here according to all required course components. Each student will receive a midterm grade via LOCUS at least one week prior to the Withdraw deadline for the semester. Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

Grading Scheme

Discussion	12% (best twelve of fourteen discussion grades are recorded)
ALEKS	13%
Unit Exams	50% (best two of three exam grades are recorded)
Final Exam	25%*
Total score	100%

*the final exam is mandatory to earn a passing grade

Letter Grade Cutoffs:

Grade	Percentage
A	93.0-100
A-	89.0-92.9
B+	85.0-88.9
B	81.0-84.9
B-	77.0-80.9
C+	73.0-76.9
C	69.0-72.9
C-	65.0-68.9
D	60.0-64.9
F	0-59.9

Exam Dates

Thursday, September 22, 2022	<i>Exam I</i>
Thursday, October 27, 2022	<i>Exam II</i>
Thursday, December 1, 2022	<i>Exam III</i>
Thursday, December 15, 2022	<i>Final Exam</i>

Changes to Syllabus

There may be changes to the syllabus during the semester. ***You are responsible for all syllabus changes made in class whether or not you attend. These updates will also be shared on the Sakai course page.***

Course Topics & Initial Schedule (subject to change)

8-30	1	Introduction: Matter & Measurement
9-1	1	Introduction: Matter & Measurement
9-6	2	Atoms, Molecules, & Ions
9-8	2/3	Atoms, Molecules, & Ions/ Stoichiometry: Calculations with Chemical Formulas & Equations
9-13	3	Stoichiometry: Calculations with Chemical Formulas and Equations
9-15	3/4	Stoichiometry: Calculations with Chemical Formulas and Equations/ Reactions in Aqueous Media
9-20	4	Reactions in Aqueous Media
9-22	--	Exam I (Chapters 1 – 4a or as announced)
9-27	4	Reactions in Aqueous Media
9-29	5	Thermochemistry
10-4	5	Thermochemistry
10-6	5/6	Thermochemistry/Electronic Structure of Atoms
10-11	--	<i>Fall Break (no class!)</i>
10-13	6	Electronic Structure of Atoms
10-18	6	Electronic Structure of Atoms
10-20	21	Nuclear Chemistry
10-25	21	Nuclear Chemistry
10-27	--	Exam II (Chapters 4b – 6 & 21 or as announced)
11-1	7	Periodic Properties of the Elements
11-3	--	<i>Inauguration of our 25th President of Loyola University Chicago (no class)</i>
11-8	7	Periodic Properties of the Elements
11-10	7/8	Periodic Properties of the Elements/Basic Concepts of Chemical Bonding
11-15	8	Basic Concepts of Chemical Bonding
11-17	8/9	Basic Concepts of Chemical Bonding/Molecular Geometry & Bonding Theories
11-22	9	Molecular Geometry & Bonding Theories
11-24	--	<i>Thanksgiving Break (no classes)</i>
11-29	9/10	Molecular Geometry & Bonding Theories/Gases
12-1	--	Exam III (Chapters 7 – 10a or as announced)
12-6	10	Gases
12-8	10	Gases