

Syllabus – CHEM 195-006: Foundational Concepts in Chemistry

The purpose of this syllabus is to describe the course, resources, and policies. It is meant to 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 195-006 – Foundational Concepts in Chemistry (1 credits: Lecture)

Prerequisites: Completion of CHEM 101 with a grade of C- or better, or an equivalent course. A student missing a prerequisite may be withdrawn at any time.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: Friday 4.15 - 5:30 pm, Flanner Hall Room 105

Instructor Contact Information

Instructor: Dr. Erwin Weerawardhana

Email: eweerawardhana@luc.edu

Email timing: In most cases, I will respond within 24-48 hours Monday-Friday when classes are in session. You are encouraged to use Office Hours to get immediate answers to your questions, and to use your classmates as resources for help.

Office Hours Policy: Office hours are a time set aside by the instructor for students to ask questions in a smaller setting. Students are encouraged to come to office hours. No appointment is necessary during the times listed under Office Hours Schedule.

Office Hours Schedule:

Friday 3.00 – 4.00 pm, Flanner Hall Lobby

Required Course Materials

- Textbook: OpenStax Chemistry, Atoms First 2e. Web-only, digital, or printed version. <https://openstax.org/details/books/chemistry-atoms-first-2e?Book%20details>
- Textbook: OpenStax Organic Chemistry, A Tenth Edition, Web-only. <https://openstax.org/details/books/organic-chemistry>
- Recommended: Molecular Model Kit (Duluth Labs MM-005 or equivalent)
- Loyola email, Sakai (and integrated tools) additional software & online resources
- Additional software may be used. Downloads will be free but required. These may include applications that convert photos to pdfs (examples: CamScanner, Scannable, GeniusScan).

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. Content posted without permission will be in violation of Copyright/Intellectual Property laws.

Course Content & Learning Outcomes

The primary outcome of this course is to support a successful transition from CHEM 101 to the CHEM 180/181 curriculum. The focus is on pre-requisite topics that are required in CHEM 160 but are not covered in CHEM 101 or an equivalent course.

Students will develop problem-solving skills, the ability to make claims based on evidence, the ability to use and understand models, and the skills of effective communication of scientific results. When successful, a student will be able to:

- Differentiate types of matter based on their chemical and physical properties.
- Use multiple perspectives of matter (macroscopic, particle, symbolic levels) to qualitatively describe and explain characteristics, properties, and relationships of chemical systems.
- Draw and interpret multiple representations of structures.
- Quantify relationships between variables controlling chemical 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

Early in the course, you will be given an opportunity to provide contact information to other people and to introduce yourself to multiple classmates. If you miss a class for any reason, it is your responsibility to work through the content. Contact a classmate for further discussion of the topics as you are still responsible for all material covered and assigned.

An outline will be shown at the beginning of each class and uncompleted lecture notes/handouts/links/animations will be posted on Sakai.

Classroom & 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.

Student and Faculty Expectations

Expectations of Students: I expect students to take ownership of their learning and to use office hours as learning resources. This course is built to prepare you for the topics discussed in CHEM 180 which were previously covered in CHEM 160/161.

Expectations of Instructor: I will provide you with the tools, environment, encouragement, and support to learn Chemistry. Because the course objectives are based on what students learn, my teaching techniques include homework, groupwork, and active learning. I expect 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/athleteadvising/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 1 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/fall/academic_calendar.shtml

• Last day to drop a course without a grade of "W" is September 8 Sunday 2024. Last day to withdraw with a grade of "W" is November 1 Friday 2024.

• Loyola is using SmartEvals to provide instructor & course feedback. OIE will send emails near the end of the term.

Information about Title IX

Please refer to the information at this link:

<https://www.luc.edu/equity/otherresources/resourcesforfacultystaff/syllabuslanguage/>

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 2024 semester, students are able to convert a class to "Pass/No-Pass" or "Audit" on September 9 Monday 2024. 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/>

Final Exam

There will **not** be a final exam for this course.

Class Quizzes

Quiz questions will emphasize material covered in lectures. All the Quizzes will be covered on Wednesdays during class time. The lowest quiz will be dropped.

Home Work

All the Homework will be distributed during end of the class on Friday and due on coming Friday at 4.15 pm. Students should submit the written hard copies of the homework to the instructor at the beginning of the class on Monday. **No** extensions will be given. You are allowed to work with others to complete the homework.

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 quiz due to absence for any reason is already accommodated in the course grading system. See grading scheme below.

You **must** provide documentation for an absence. This accommodation is 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

Participation	20% (Discussion Questions 20 %)
Homework	15%
<u>Quizzes</u>	<u>65%</u>
Total score	100%

Letter Grade Cutoffs:

Grade	Percentage
A	93.00-100
A-	89.00-92.99
B+	85.00-88.99
B	81.00-84.99
B-	77.00-80.99
C+	73.00-76.99
C	69.00-72.99
C-	65.00-68.99

D	60.00-64.99
F	0-59.99

These grade cutoffs are firm at the end of the semester. No rounding or extra credit will be considered.

PowerPoint Slides/Lecture Notes

PowerPoint slides will be posted on Sakai prior to the beginning of each new chapter. Other miscellaneous items (discussion, Quiz, Homework answer keys) will be given during the class time. It is the responsibility of the student to check Sakai regularly for new information.

Electronic Devices

Cell phones and other mobile devices should be set to silent mode and placed away before class begins. Use of these devices in class may result in dismissal from lecture. Laptops and tablets are permitted for note-taking purposes only.

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.***

Tentative CHEM 195 Lecture Schedule*

Date	Chapter	Topic
8/30	4 (Atoms), 1.12, 2.3-2.6 (McMurry)	Lewis Dot Structures/Skeletal Structures/Perspective Drawing
9/6	3.2, 3.6, 3.7 (McMurry)	Isomers
9/13		Isomers
9/20	5.1, 5.2, 5.7, 7.4, 7.5 (McMurry)	Chirality and Enantiomers
9/27		Chirality and Enantiomers
10/4	3.6, 3.7 (McMurry)	Conformers and Newman Projections
10/11		Conformers and Newman Projections
10/18	10,11 (Atoms)	Interparticle Properties and Forces
10/25		Interparticle Properties and Forces
11/1	10 (Atoms)	Heating Curve and Phase Diagrams
11/8		Heating Curve and Phase Diagrams
11/15	19 (Atoms)	Coordination Complexes
11/22		Coordination Complexes
12/6		Review

*Subject to change as necessary