



# LOYOLA UNIVERSITY CHICAGO

Department of Chemistry & Biochemistry  
1068 W. Sheridan Rd.  
Chicago, IL 60660  
<https://www.luc.edu/chemistry/>

**Course:** **General Chemistry B (CHEM 102-019)**  
Semester: Spring 2022  
Lecture: 019 – MWF 2:45-3:35 PM CT (*Flanner 133 - Auditorium*)  
Discussions: 020 – F 8:15-9:05 AM CT (*FH 007*)  
021 – F 9:20-10:10 AM CT (*FH 007*)  
022 – F 11:30 AM -12:20 PM CT (*FH 105*)

*\*Attend assigned discussion section*

*\*In person lecture/discussion may switch to online and may include asynchronous supplemental material, as circumstances warrant*

**Professor:** **Dr. Adri Lugosan**  
Email: [alugosan@luc.edu](mailto:alugosan@luc.edu)  
Office: Flanner Hall 200A  
Office Hours: M 8:00-9:00 PM (Zoom: <https://luc.zoom.us/j/87813846424>)  
W 9:15-10:15 AM (FH 129)  
Th 4:00-5:00 PM (FH 129)  
or by appointment

*\*No problem-solving questions via email – only in discussion section/office hours.*

**Supplemental Instructor:** **Katherine Konczak**  
Email: [kkonczak1@luc.edu](mailto:kkonczak1@luc.edu)  
SI Sessions: T 5:00 pm (Tutoring Center - stations 9 & 10)  
Th 8:00 pm (Tutoring Center - stations 9 & 10)  
Sun 6:00 PM (Zoom: <https://luc.zoom.us/j/84062155381>)

**Course Description:** Lecture and discussion. Build on knowledge from Chem 101 for an in-depth study of topics in Chem 102. We will focus on applying a conceptual understanding of fundamental chemical principles. Students will continue to 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. Students will use multiple perspectives of matter (macroscopic, particle, symbolic levels) to qualitatively describe and explain characteristics, properties, and relationships of the following: liquids and solids, solutions, reaction kinetics, equilibria, acids and bases, reaction thermodynamics, and electrochemical system.

**Prerequisite:** Chemistry 101 or 105 and completion of Math 118 w/ C- or better OR math proficiency exam

**Materials:** **Textbook / Learning Platform**  
Brown, LeMay, et. al. (2018) Pearson Modified Mastering Chemistry Access Card for Chemistry, The Central Science (plus eText) 14th Ed.

Registration Course ID: lugosan74121

**\*\*Follow registration/purchase instructions posted in Sakai Resources**

**\*\*can later purchase loose-leaf within Mastering e-text for ~\$44.99**

### **Required Technology**

Modified Mastering Chemistry Platform (included with above purchase)

Non-graphing calculator (i.e. TI-30XIIS) ~\$13 (amazon)

Zoom (<https://www.luc.edu/its/itrs/teachingwithtechnology/zoom/>)

**Sakai:** All students are enrolled in the class Sakai site. It is imperative that you check this site daily to keep informed of all activities.

**Important Dates:** March 28 – withdraw deadline (W vs. WF)

### **Homework: Mastering Chemistry Assignments (10%)**

It is expected that students will read the chapters prior to the first class in which the material is presented (this should take 2-3 hours per chapter – highlight, take notes!). Required homework assignments (blue dot icons) and optional practice assignments will be listed in the Mastering Chemistry platform. The “Calendar” function is a good place to look and see what is due and when.

Additional practice is encouraged using the end-of-chapter problems (odd answers at the back of the textbook). Suggested problems may be highlighted for emphasis throughout lecture and discussion.

Keep in mind that for a 3-credit course students should spend ~9-12 hours/week studying and attempting practice problems to keep-up with the pace of the course.

**The lowest 2 homework scores will be dropped – this allows for 2 missed assignments due to illness or any other reason.**

**\*\*assignment content and due dates/times in Mastering may be edited/alterd, added/removed at the professor’s discretion, as the semester dictates**

### **Participation: Discussion Session Participation (10%)**

Students are expected to regularly attend discussion. Discussion sessions will include interactive activities, problem solving, hand-outs, practice quizzes and/or other activities. Much of this work will be done in small groups although some individual work may be assigned. Grading of these assignments/sessions will be for effort and participation rather than correctness.

Participation will be monitored by the TA and/or professor, and attendance may be recorded in a variety of ways (upload a filled-out handout on Sakai, answer a mini-quiz on Sakai, attendance record, etc.). The TA or professor will notify students each session as to how attendance will be recorded. Attending is not a guarantee of points- actively answering questions (but allowing other students to also speak!) and actively problem-solving (showing work on handouts) is required.

**Students may earn up to 10 points max of possible participation points. There are > 10 opportunities to earn credit throughout the semester. This allows for leeway when missing discussions due to illness or any other reason. Discussion credit cannot be made up.**

### **Exams: Exams + Final (80%)**

Exams will be taken in person but may have some online components. Exams are not cumulative; however, material builds on prior knowledge. The Final exam IS cumulative. Exams may be entirely multiple choice or have short

answer, essay, or matching questions in addition. Exams will be graded using Gradescope (see e-mail for registration instructions).

\*Professor reserves the right to implement a curve or adjustment to exam scores

\*\*Announcements on Sakai override any described procedures here

**Exam Dates:**

**Exam 1** – Monday, February 14

**Exam 2** – Monday, March 21

**Exam 3** – Wednesday, April 13

**FINAL** – Wednesday, May 4 (at 7 PM)

\*Final Exam IS Cumulative

**Grading Scale:**

93-100% = A    90-92% = A-  
87-89% = B+    83-86% = B    80-82% = B-  
77-79% = C+    73-76% = C    70-72% = C-  
60-69% = D  
Below 60% = F

\*\*Professor reserves right to implement a curve. Grade rounded up if within 0.5% (89.5 = A- and 89.4 = B+)

**Grade:**

Grades will be determined using the *higher* of the two methods below:

1) **Regular Grade Calculation**

20%: Participation + Mastering Homework

Remaining 80%: All three exams + final are averaged

2) **Lowest Exam Dropped Grade Calculation**

20%: Participation + Mastering Homework

Remaining 80%: Final weighs ½ and top 2 exams weigh ¼ each

*\*\*due to this policy there will be NO make-up exams. If you miss an exam, it will count as the “dropped” exam, and method #2 will be used to calculate the grade.*

**To calculate what you need on the Final:**

Ex 1) Student X wants to calculate the grade needed on the final exam in order to gain an overall score of 70% or a C- in the class. Student X has received the following scores thus far:

Homework: 60%; Participation: 90%

Exam 1: 56%; Exam 2: 70%; Exam 3: 42%

Method 1:

$$\left( \frac{56 + 70 + 42 + Final}{4} * 0.80 \right) + (60 * 0.10) + (90 * 0.10) = 70$$

Subtract 15 from each side, then x4 and /0.8 on each side to give:

$$56+70+42+Final=275$$

Subtract the 3 known scores to give

$$Final=107\%$$

Method 2:

$$\left( \frac{56 + 70 + 2Final}{4} * 0.80 \right) + (60 * 0.10) + (90 * 0.10) = 70$$

Subtract 15 from each side, then x4 and /0.8 on each side to give:

$$56+70+2Final=275$$

Subtract the 2 known scores to give

$$2Final= 149$$

Divide by 2 on each side

$$Final=74.5\%$$

Therefore, Student X needs to earn a score of 74.5% on the final exam in order to pass the class with an overall grade of 70% or C-

**Additional Resources:**

**1) SI (Supplemental Instruction) Sessions**

There are Supplemental Instruction (SI) study sessions available for this course. SI sessions are led by an SI leader, who is a student that has recently excelled in the course. Session attendance is open to all, and while it is voluntary, it is extremely beneficial for those who attend weekly. Times and locations for the SI session can be found here: [www.luc.edu/tutoring](http://www.luc.edu/tutoring). Students who attend these interactive sessions find themselves working with peers as they compare notes, demonstrate, and discuss pertinent problems and concepts, and share study and test-taking strategies. Research shows students whom regularly attend sessions have higher grades at the end-of-the-semester and more deeply understand course concepts than those who do not. Students are asked to arrive with their Loyola ID number, lecture notes, and textbook. The SI is your advocate, and all interactions with an SI are confidential. The SI may share general feedback to the professor but will never indicate the comments or performance of any specific student. Attendance in the SI sessions will not be shared with the professor and does not affect final grades.

**2) Tutoring Center**

The tutoring center offers drop-in Zoom tutoring sessions as well as individual appointments via TutorTrac. Success coaches are also available. <https://www.luc.edu/tutoring/>

**3) ACS Tutoring**

Drop in undergraduate student led tutoring. Find dates and times here: [Chemistry: Tutoring Center: Loyola University Chicago \(luc.edu\)](http://www.luc.edu/chemistry/tutoring-center)

**Institutional Policies:**

Loyola Official Academic Calendar: [www.luc.edu/academics/schedules](http://www.luc.edu/academics/schedules)

**Incomplete Grade:**

If the Final Exam is missed for extenuating circumstances (incapacitating illness, immediate family member death, fire/flood or related emergency) students must fill-out an “Incomplete Grade Form”. Be aware that the option to apply for an incomplete grade is at the discretion of the professor. Incomplete grade info: <https://www.luc.edu/regrec/faculty.shtml>

**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. Students must come to the Chemistry Department, fill out a permission to register form or print it from the Department of Chemistry & Biochemistry website: <http://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.

Students are encouraged to seek help with the course material early and often during the semester. Attend office hours regularly for assistance before any deficiencies become serious!

#### Accommodation Requests:

Additional time on exams, a quiet space for exams, a note-taker, or permission to record lectures can be requested for qualifying students. It is the responsibility of the student to register with SAC and to provide documentation to the professor prior to the initiation of such accommodations. Student Accessibility Center: <https://www.luc.edu/sac/registerwithsac/>

#### 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: <http://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. **Lapses in academic integrity will result in a grade of 0 (zero) on the assignment or exam, which cannot be “dropped” per any other class policy. A second transgression will result in a grade of 0 (zero) in the course overall.**

#### 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 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 as far in advance of the absence as possible. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to give the student the opportunity to take the examination at another time.

(<https://www.luc.edu/athletheadvising/attendance.shtml>)

#### 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.

#### Recording of Class meetings:

In this class software may be used to record live class lectures. As a student in this class, your participation in live class discussions will be recorded. These recordings will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. All

recordings will become unavailable to students in the class when the course has concluded. In case of a move to online learning: *Students will be required to turn on their cameras at the start of class. Students who have a need to participate via audio only must reach out to me to request audio participation only without the video camera enabled.* The use of all video recordings will be in keeping with the University Privacy Statement shown below.

#### 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. Students may not share, electronically (uploading to the web) or otherwise (email, text message, in-person, etc.), any material outside of this course including but not limited to: Zoom/Panopto recordings, PowerPoint or other presentations, tests, quizzes, screenshots, handouts, journal articles, or any created material from the course. Any breach to this policy can result in legal action.

#### Mask Policy

As a Departmental policy, even in the event the University relaxes its universal requirement for indoor mask-wearing during the Spring 2022 semester, 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 properly wear masks at all times (e.g. over nose and mouth).

## Tentative Course Schedule/Outline:

\*\*The instructor reserves the right to adjust the schedule, assignments, and grading rubric as circumstances may warrant during the semester.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	Jan 17	Jan 18 <sup>†</sup>	Jan 19 <sup>†</sup>	Jan 20 <sup>†</sup>	Jan 21 <sup>†</sup>
	<b>MLK No Class</b>		Syllabus/Ch 11		Ch 11/12
2	Jan 24 <sup>†</sup>	Jan 25 <sup>†</sup>	Jan 26 <sup>†</sup>	Jan 27 <sup>†</sup>	Jan 28 <sup>†</sup>
	Ch 11		Ch 11/12		Ch 13
3	Jan 31	Feb 1	Feb 2	Feb 3	Feb 4
	Ch 13		Ch 13		Ch 13/14
4	Feb 7	Feb 8	Feb 9	Feb 10	Feb 11
	Ch 14		Ch 14		Ch 21/Review
5	Feb 14	Feb 15	Feb 16	Feb 17	Feb 18
	<b>Exam 1</b>		Ch 15		Ch 15
6	Feb 21	Feb 22	Feb 23	Feb 24	Feb 25
	Ch 15		Ch 15		Ch 15
7	Feb 28	Mar 1	Mar 2	Mar 3	Mar 4
	Ch 16		Ch 16		Ch 16
8	Mar 7	Mar 8	Mar 9	Mar 10	Mar 11
	<b>Spring Break – No Class</b>				
9	Mar 14	Mar 15	Mar 16	Mar 17	Mar 18
	Ch 16		Ch 16		Ch 16/Review
10	Mar 21	Mar 22	Mar 23	Mar 24	Mar 25
	<b>Exam 2</b>		Ch 17		Ch 17
11	Mar 28	Mar 29	Mar 30	Mar 31	Apr 1
	Ch 17		Ch 17		Ch 17
12	Apr 4	Apr 5	Apr 6	Apr 7	Apr 8
	Ch 19		Ch 19		Ch 19
13	Apr 11	Apr 12	Apr 13	Apr 14	Apr 15
	Ch 19/Review		<b>Exam 3</b>		<b>No Class</b>
14	Apr 18	Apr 19	Apr 20	Apr 21	Apr 22*
	<b>No Class</b>		Ch 20		Ch 20*
15	Apr 25	Apr 26	Apr 27	Apr 28	Apr 29
	Ch 20		Ch 18/Review		Review
16	May 2	May 3	May 4	May 5	May 6
			<b>FINAL EXAM</b>		

<sup>†</sup>Jan 18-30: Synchronous online learning for lecture & discussion

\*Apr 22: Asynchronous Content (see Panopto video and Sakai for Discussion)

## Course Content:

Ch 11. Liquids and Intermolecular Forces/Ch 12. Solids and Modern Materials

Ch 13. Properties of Solutions

Ch 14/21. Chemical Kinetics/Nuclear Chemistry

Ch 15. Chemical Equilibrium

Ch 16. Acid-Base Equilibrium

Ch 17. Additional Aspects of Aqueous Equilibria

Ch 19. Chemical Thermodynamics

Ch 20. Electrochemistry/

Ch 18. Chemistry of the Environment (if time allows)