

CHEM 102–001: General Chemistry Syllabus

Spring 2022: Jan 18 – May 7

Last updated: 1/14/2022

Course. Chemistry 102, General Chemistry B, 3 Credits: Lecture and discussion

Prerequisites. Chemistry 101 or 105 and completion of Math 118 with a grade of C- or better. A student missing a prerequisite may be withdrawn at any time.

Instructor. Murat Kahveci, Ph.D.
Office: Flanner Hall 409
Email: mkahveci@luc.edu
Office Hours: Tu Th F 10:00 – 11:00 am via Zoom at
<https://luc.zoom.us/j/83477859876> (must be authenticated).
All other times, by appointment only.

SI. David Hill
Email: dhill9@luc.edu

Temporary Synchronous Online Teaching Modality. Both lecture and discussion sessions will be held online in synchronous format via Zoom until Monday, January 31, 2022.

See the announcement at <https://loyolachicago.us.newsweaver.com> for more details.

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

Class Meetings.

a. Between Tuesday, January 18 – Monday, January 31, 2022:

	Days & Times	Room
CHEM 102-001 Lecture	TuTh 2:30PM - 3:45PM	Sakai → Zoom Pro (must be authenticated)
CHEM 102-002 Discussion	Mo 10:25AM - 11:15AM	Sakai → Zoom Pro (must be authenticated)
CHEM 102-003 Discussion	Mo 1:40PM - 2:30PM	Sakai → Zoom Pro (must be authenticated)
CHEM 102-004 Discussion	Mo 2:45PM - 3:35PM	Sakai → Zoom Pro (must be authenticated)

b. After Monday, January 31, 2022:

	Days & Times	Room
CHEM 102-001 Lecture	TuTh 2:30PM - 3:45PM	Flanner Hall - Auditorium
CHEM 102-002 Discussion	Mo 10:25AM - 11:15AM	Flanner Hall - Room 7
CHEM 102-003 Discussion	Mo 1:40PM - 2:30PM	Flanner Hall - Room 7
CHEM 102-004 Discussion	Mo 2:45PM - 3:45PM	Flanner Hall - Room 105

Zoom Guidelines and Expectations: This class will use Zoom for office hours and all lecture/discussion meetings until January 31, 2022. Students should follow general guidelines and meet participation expectations for Zoom meetings:

- Use your given or preferred name as your display name.
- Don't use distracting or inappropriate profile photos or virtual backgrounds.

- Minimize distractions, such as televisions and cell phones, when possible.
- Try to put your device at eye level on a solid surface. Holding your device or placing it in your lap can add movement to your video, which can be distracting.
- Don't engage in other activities during sessions (driving, cooking, cleaning, etc.)
- Mute your microphone when you're not speaking to minimize background noise.
- Don't share meeting links, passwords, screenshots, recordings, or other meeting information. with people outside the class.
- If connectivity issues impact your audio/video quality, try turning off your camera.
- Be on time or notify your instructor if you will be late or unable to attend.
- If you think you might have trouble actively participating in meetings, let your instructor know in advance, if possible.
- Contact Loyola's Technology Support Center at (773) 508-4487 or via email at ITS Service Desk ITSServiceDesk@luc.edu, if you need assistance during a video call.

SI Information. There are Supplemental Instruction (SI) study sessions available for this 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: <https://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.

Email Policy. I require that our lecture course, Chem 102, is listed in the email subject line. Here is how to do this:

- Reply to one of emails that I sent from Sakai to the entire class.
- Use Email in Sakai, send to me: Instructor, via Select Recipients, and leave the subject line blank.
- Use your Loyola email and put: Chem 102 in the subject line, send to mkahveci@luc.edu.

In most cases I will be able to respond within 24 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 Hour Policy. Office Hour (OH) is one of the Resources for Help, available to give students a regular set of times every week to have access to talk to the instructor outside of scheduled classes. For regular, online OH, just show up! Bring your questions, fully or partially formed, anytime during the times listed. Bring a classmate with you or meet your classmates online to work together & get feedback & help. All students are encouraged to attend office hours regularly to ask questions or to discuss any issues that arise during the semester. Private conversations can occur by request – just show up!

Course Materials.

Textbook/Online Homework: Chemistry The Central Science, Brown et. al., 14th edition. ISBN-13: 978-0-13-441423-2; eText or hard copy. We will use Modified Mastering Chemistry as our online homework system. Both textbook and Mastering Chemistry are required.

To register for CHEM 102 - 001 General Chemistry at Pearson website:

1. Go to <https://mlm.pearson.com/enrollment/kahveci56840>.
2. Sign in with your Pearson student account or create your account. Make sure that you register with your full name as it appears in class roster and enter your student ID.

3. Select any available access option, if asked.
 - Enter a prepaid access code that came with your textbook or from the bookstore.
 - Buy instant access using a credit card or PayPal.
 - Select Get temporary access without payment for 14 days.
4. Select Go to my course.
5. Select CHEM 102–001 General Chemistry from My Courses.
6. If you contact Pearson Support, give them the course ID: kahveci56840
7. To sign in later:
 - Go to <https://mlm.pearson.com>.
 - Sign in with the same Pearson account you used before.
 - Select CHEM 102 - 001 General Chemistry from My Courses.

Other Materials/Resources.

- Computer and mobile device (phone, tablet) for connectivity to online resources, including using of a camera or connected webcam (Especially until January 21, 2022).
- Accommodation requests must be discussed with Instructor at least one week before a test.
- Scientific Calculator
- Loyola Sakai course management site: <https://sakai.luc.edu/portal> and tools integrated into the site (e.g. Panopto, Zoom Pro, Tests & Quizzes).
- Loyola email. Messages are sent to the entire class via Sakai, linked to your Loyola email account.
- Zoom conferencing. Meeting information is posted on Sakai → Zoom Pro (must be authenticated).
- Additional web-based systems will be used for uploading your work and facilitating feedback and evaluation. Registration will be free but required. These may include GradeScope, Flipgrid, and other sites.
- Additional software will be used. Downloads will be free but required. These may include applications that convert photos to pdfs (examples: CamScanner, Scannable, GeniusScan), collaboration materials for group work (examples: JamBoard, OneNote), testing-related software approved by the University (example: Respondus Browser), and others.

Course Description. The course further develops basic chemical principles from CHEM 101 and requires in-depth integration of concepts. Multiple perspectives of matter will be used to describe and explain characteristics, properties, and relationships across the following topics: liquids and solids, solutions, reaction kinetics, equilibria, acids and bases, reaction thermodynamics, electrochemical reactions.

Students will deepen their understanding of foundational concepts of chemistry and advance their skills in scientific problem solving, critical thinking and synthesis of concepts.

Course Content and Objectives. Prerequisite knowledge from Chemistry 101 is necessary for in-depth study of topics in Chemistry 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.

The material is highly cumulative over two semesters, such that you will be able to do the following:

- 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, electrochemical reactions.
- 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. Attending to the Lecture and Discussion meetings are mandatory. You will have the chance to introduce yourself to multiple classmates early in the course on Zoom. Our actual pace may vary from the tentative schedule posted on Sakai → Resources folder. If you miss a class for any reason, it is your responsibility to work through the content along with the lecture recording/lecture notes once it is posted, 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.

Important Deadlines.

- January 24, 2022: Late and change registration ends. Last day to withdraw without a mark of "W"
- January 31, 2022: Last day to drop class(es) with a Bursar credit of 100%- dates maintained by Bursar
- February 14, 2022: Last day to drop class(es) with a Bursar credit of 50%- dates maintained by Bursar
- February 21, 2022: Last day to drop class(es) with a Bursar credit of 20% (zero credit thereafter)

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. I expect you to take ownership of your learning and to use the SI support 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 pre-lecture homework, active learning and metacognition, to help you maximize your learning. I expect that all of us will work together!

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 Spring 2022 semester, students are able to convert a class to "Pass/No-Pass" or "Audit" through Monday, January 31st. 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/campusinfosources>.

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). The Department advises that it is preferable to complete a course with a grade of C or C-, and to demonstrate growth in future coursework, 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.

Student Accommodations. The Student Accessibility Center (SAC, formerly known as SSWD), Sullivan Center (773-508-3700), <http://www.luc.edu/sac>, has the mission “to support, service, and empower Loyola University Chicago students with disabilities” and to “Partner with faculty and staff to provide opportunities for collaboration, professional development, personal growth, and staff interaction, as they relate to students with disabilities.” Please direct all questions concerning accommodations of disabilities to the Student Accessibility Center. Academic accommodations afforded to students require documentation and review. The Student Accessibility Center will issue accommodation letters for registered students to present to their instructors: accommodations are not active until students present these letters to their instructors. If students’ accommodations involve attendance or deadlines, instructors and students will jointly complete and execute an Agreement Form articulating their terms. See <https://www.luc.edu/sac/faculty/facilitatingaccommodations> for guidance about implementing various kinds of accommodations in a way that is appropriate to your class. The Student Accessibility Center stands ready to work with you.

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. (please specify what the punishments will be for transgressions).

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 (See <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 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 Zoom Class Meetings. In this class software will be used to record live class discussions. 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 Sakai course is unpublished (i.e. shortly after the course ends, per the Sakai administrative schedule). 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

LUC Academic Calendar. <https://www.luc.edu/academics/schedules>

Course Grading. The total grade for the course is based on Mastering HWs, Group Quizzes, Exams, and Final Exam.

Mastering HWs. Mastering Chemistry is the online homework system we will use entire semester. From some inquiry emails I got before, I understand that some of you already have Mastering Chemistry from CHEM 101. So, we will continue to use the known platform for more in-depth understanding of the concepts targeting at the specific sections of the textbook. While being lengthy, this kind of thorough practice is necessary to master the concepts and problem-solving skills in this course.

Considering that majority of exam questions and some other relevant standardized test (e.g. ACS Exam) are multiple-choice in nature, Mastering Chemistry assignments would prepare you for such measurements. In my experience, there is a high degree of positive correlation between Mastering Chemistry scores and overall course grades. The higher the Mastering average, the closer your future overall course grade. If you are not getting good scores from Mastering HWs, this is an early signal for you to get alarmed and adjust your learning strategy accordingly.

Mastering HWs are accessible at <https://mlm.pearson.com> and they are due at the end of the day (11:55 PM) listed on the tentative schedule. Typically, each Mastering HW will be posted one week before it is due.

The lowest Mastering HW will be dropped.

Group Quizzes. Weekly, completed in small groups (assigned by instructor). The purpose of working challenging problems as a group is to help you learn via cooperation, communication and support among your classmates as you push the limits of your knowledge. For weekly synchronous quizzes you are required to attend your scheduled discussion face-to-face (on Zoom when remote modality is in effect) to work with your assigned group. Each group submits one copy of their work at the end of the discussion period. Participating group members will receive Completion credit if the work they submit includes a meaningful attempt at completing all of the problems. The lowest group quiz will be dropped.

Exams. These exams are comprehensive reviews of the two chapter most recently covered, plus whatever other material from earlier in the course is necessary to assess you on those chapters. It will be both multiple choice and free response. The lowest exam will be dropped.

Final Exam. It's a final. Its like the exams but bigger covering all the content. The University sets the schedule for all final exams, and has posted the schedule for Spring 2021:

<https://www.luc.edu/academics/schedules/spring/exam.schedule.shtml#d.en.203583>.

The final will be held on:

Wednesday, May 4, 2022 at 7:00PM ([Common Chem Department Final Exam time slot](#)). Room: TBD.

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 you have four final examinations scheduled for the same date, please e-mail a petition to Adam Patricoski, Assistant Dean for Student Academic Affairs, CAS Dean's Office (apatricoski@luc.edu).

Grading Scale. The following scale will be used to determine letter grades.

Category	Lowest Dropped	Weight	Percent Range	Letter Grade
Mastering HWs	1	15%	100 – 93	A
Group Quizzes	1	10%	92 – 89	A–
Exams	1	40%	88 – 85	B+
Final Exam	–	35%	84 – 81	B
Total:		100%	80 – 77	B–
			76 – 73	C+
			72 – 69	C
			68 – 65	C–
			64 – 60	D
			0 – 59	F

COVID Protocols and Assistance.

Spring 2022 Masking Requirement. It is Departmental policy that, 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).

Eating and Drinking in the Classroom. In general, students removing their mask to take a drink is acceptable but removing the mask to eat is not. Students who need to have food available during class should work with the [Student Accessibility Center](#) to have that accommodation documented.

Illness. If you are exhibiting any cold or flu like symptoms, you should remain at home. A variety of options are listed below to mitigate illness related issues.

Absence (Lecture). Class lectures will be recorded and uploaded to Sakai (Zoom Cloud).

Absence (Discussion). Illness based absences must be relayed (emailed) to the instructor by 9:00 AM. Discussion groups for absent members will be completed via Zoom. If a student is performing more than 2 sessions remotely, medical documentation for all instances must be provided. More than 6 remote sessions is not allowed short of hospitalized incapacitation.

Absence (Quizzes/Exams). The primary mechanism for accommodating illness is the dropped exam/quiz (see Grading Scale above).

Absence (Mastering HWs). Mastering HWs are online and no accommodations are needed.

Please Note. Documentation of illnesses is non-negotiable in the instances when it is listed above.

Tentative Outline of the Course

An outline of the topics that will be covered in this course appears below. Although I will generally follow the order of presentation found in your textbook, on occasion I will deviate from this order. Please refer to the tentative schedule and posted announcements on Sakai to note these deviations.

MONDAY	TUESDAY	THURSDAY
Jan 17th Martin Luther King Holiday (No Class)	18th Liquids and Intermolecular Forces. Reading: §11.1-2, §11.4-6, §12.1-4	20th Liquids and Intermolecular Forces. Reading: §11.1-2, §11.4-6, §12.1-4
24th Discussion 1 MCHW 1 Due	25th Liquids and Intermolecular Forces. Reading: §11.1-2, §11.4-6, §12.1-4	27th Liquids and Intermolecular Forces. Reading: §11.1-2, §11.4-6, §12.1-4
31st Discussion 2 MCHW 2 Due	Feb 1st Properties of Solutions. Reading: §13.1-6	3rd Properties of Solutions. Reading: §13.1-6
7th Discussion 3 MCHW 3 Due	8th Chemical Kinetics. Reading: §14.1-4, §21.4, §14.5-7	10th Chemical Kinetics. Reading: §14.1-4, §21.4, §14.5-7
14th Discussion 4 MCHW 4 Due	15th Chemical Kinetics. Reading: §14.1-4, §21.4, §14.5-7	17th Exam 1 (Chapters 11 – 14 or as announced)
21st Discussion 5 MCHW 5 Due	22nd Chemical Equilibrium. Reading: §15.1-7	24th Chemical Equilibrium. Reading: §15.1-7
28th Discussion 6 MCHW 6 Due	Mar 1st Chemical Equilibrium. Reading: §15.1-7	3rd Acids and Bases. Reading: §16.1-10
7th Spring Break (No Class)	8th Spring Break (No Class)	10th Spring Break (No Class)
14th Discussion 7 MCHW 7 Due	15th Acids and Bases. Reading: §16.1-10	17th Exam 2 (Chapters 15 & 16 or as announced)
21st Discussion 8 MCHW 8 Due	22nd Acid-Base Equilibrium. Reading: §17.1-6	24th Acid-Base Equilibrium. Reading: §17.1-6
28th Discussion 9 MCHW 9 Due	29th Acid-Base Equilibrium. Reading: §17.1-6	31st Acid-Base Equilibrium. Reading: §17.1-6
Apr 4th Discussion 10 MCHW 10 Due	5th Chemical Thermodynamics. Reading: §19.1-7	7th Chemical Thermodynamics. Reading: §19.1-7
11th Discussion 11 MCHW 11 Due	12th Chemical Thermodynamics. Reading: §19.1-7	14th Easter Holiday (No Class)
18th Easter Holiday MCHW 12 Due (No Class)	19th Electrochemistry. Reading: §20.1-7, §20.9	21st Exam 3 (Chapters 17 & 19 or as announced)
25th Discussion 13 MCHW 13 Due	26th Electrochemistry. Reading: §20.1-7, §20.9	28th Electrochemistry. Reading: §20.1-7, §20.9

The cumulative final exam will be held on Wednesday, May 4, 2022 at 7:00PM (Common Chem Department Final Exam time slot). Room: TBD.

I reserve the right to make changes to this schedule, as necessary.