Calendar portion revised 1-12-22

General Chemistry 101 – Spring 2022

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Lecture	Tues/Thurs 4:15 – 5:30 p.m.		Flanner Hall – Auditorium (Sect 005)
Discussion	Tues	11:30 – 12:20 p.m.	Mundelein Center – Room 406 (Sect 006)
	Tues	2:30 – 3:20 p.m.	Flanner Hall – Room 007 (Sect 007)

Office Hours Tues: 12:30 – 2:00 p.m. & Thurs: 2:30 – 4:00 p.m.

Supplemental Instructor	Love Patel
Email	lpatel2@luc.edu
Office Hours	TBD

Required Text: Brown, LeMay, Bursten, Murphy, Woodward Chemistry-The Central Science 14th Ed. ISBN 978-0134414232
Required Online: ALEKS (login information can be found under the resources tab in Sakai)

1. Course Content & Objectives: This course is the first in a two-semester 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.

The student should learn how to:
1. 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. non-electrolyte).
2. 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, thermo-chemistry, aqueous solutions, gases.
3. Quantify relationships between variables controlling chemical systems.
4. Solve quantitative multistep problems combining multiple concepts within the systems.
5. Differentiate among closely related factors, categorize problem types, and select appropriate tools to solve these problems.
6. Apply chemical principles to explain natural phenomenon.

2. IDEA Objectives: Chosen by the faculty for General Chemistry; also apply across other courses and disciplines.

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. Gaining a broader understanding and appreciation of intellectual/cultural activity (music, science, literature, etc.)
4. Learning how to find, evaluate, and use resources to explore topics in depth

3. Quizzes, Exams, and Grading:

A total of six quizzes will be given throughout the semester. **No early quizzes, no make-ups, and no exceptions.** If you are more than 10 minutes late for the quiz, a late penalty will be deducted from your quiz score. Quizzes include exam-level problems and are to be completed in discussion, in small groups assigned by the instructor. Quiz work must reflect the efforts of ALL the group members. The purpose of the quizzes is to foster cooperation and communication between students and the instructor, to help you learn the material. If you struggle with any part of a question in the group session, feel free to ask questions. I will do my best to help guide you towards the correct answer. Quizzes are worth 10% of your course grade. Your lowest quiz grade will be dropped. This grading policy is designed to account for an unavoidable absence (illness, emergency, broken down car, traffic, late CTA train, etc).

There are three 50-minute mid-term exams and one 2-hour final exam. The lowest of the three mid-term exams will be dropped. If you miss an hourly exam, then that is the exam that will be dropped. **No early quizzes, no make-ups, and no exceptions.** The final exam is cumulative and cannot be dropped. A calculator may be used on all exams and quizzes. However, all memory will be cleared from the calculator before each exam.

ALEKS	15%	
Quizzes	10%	(Best five out of six quizzes)
Mid-term exams	40%	(Best two out of three mid-term exams)
Final Exam	35%	
TOTAL	100%	

You must bring a form of photo identification, such as your Loyola Student ID or your driver's license, with you to the exam. During exams, you will be required to leave your books, backpacks, notebooks, etc. at the front of the room. All exams are closed book and closed notes. When you are finished with your exam, please bring your completed exam to the front, and leave the room quietly without disturbing the other students.

Exams will be graded and returned to you as quickly as possible, usually by the following week. All grading questions, points of clarification, and grading errors must be brought to the instructor's attentions during office hours no later than one week after return of the exam.

The grading scale used to determine letter grades are as follows: **A** 100 – 93, **A-** 92 – 90, **B+** 89 – 87, **B** 86 – 81, **B-** 80 – 78, **C+** 77 – 75, **C** 74 – 69, **C-** 68 – 65, **D** 64 – 60, **F** < 60.

Students wanting to drop lecture after midterm may stay in the co-req lab only if the lecture midterm grade, posted in LOCUS, is a D or better. Students should continue to attend lecture until the week of the drop date to gain as much background knowledge as possible. For Fall 2021 students wishing to drop lecture, and have a midterm grade of D or better, can seek assistance from the Department of Chemistry and Biochemistry office beginning Monday 11/1 at 9:00 a.m. through Friday 11/5 at 4:00 p.m. Students with a midterm grade of F must drop the co-req lab along with the lecture. No exceptions.

4. Exam Dates (subject to change):

Thursday, February 10, 2022:	**Mid-term Exam 1**
Thursday, March 25, 2022:	**Mid-term Exam 2**
Thursday, April 21, 2022:	**Mid-term Exam 3**
Wednesday, May 4, 2022:	**Final Exam, 7:00 – 9:00 p.m.**

5. Quiz Dates (subject to change):

Tuesday, February 1, 2022	**Quiz 1**
Tuesday, February 22, 2022	**Quiz 2**
Tuesday, March 15, 2022	**Quiz 3**
Tuesday, March 22, 2022	**Quiz 4**
Tuesday, April 5, 2022	**Quiz 5**
Tuesday, April 19, 2022	**Quiz 6**

6. Final Exam: The University sets the schedule for all final exams. The final exam will be held on:

Wednesday, May 4, 2022 7:00 – 9:00 p.m.

You will have 2 hours to complete the exam. There will be no make-up final exams given under any circumstances, and the exam will not be given early, either. Please contact your instructor immediately about any issues that arise before the exam.

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 email a petition to Adam Patricoski, Assistant Dean for Student Academic Affairs, CAS Dean's Office (apatricoski@luc.edu)

7. ALEKS: Online, at www.aleks.com, (use class code: E4KQA-NUFXC) due Mon/Wed/Fri at 11:59 p.m. as pre-lecture and post-lecture objectives. Assessments or "Knowledge Checks" are also automated into the system to help you remember course content throughout the entire semester. Chemistry is a complex and challenging subject, so I have chosen ALEKS to make sure you master the basic, fundamental concepts in the course to fully advance your personal educational and career goals. There is solid data that shows this service can improve mastery and retention, particularly for students who would otherwise have difficulty passing. ALEKS will help you by finding out YOUR individual state of knowledge, and then tutoring you in only the topics on which YOU need to work. The final outcome, the list of topics mastered, has been set for the course, and it is the same for everybody. But YOUR individual path, how you will get from the present state of mastery to that ultimate goal, is going to be unique to you. No other student will have exactly the same experience. What you must do is decide to trust the system when it assigns you work: trust that this is indeed the work you should be doing now, and that doing it diligently will build the essential mastery you need to succeed in chemistry as fast as possible. ALEKS is worth 15% of your Course Grade. The 15% is distributed as follows: 50% Intermediate Objectives, 5% Final Knowledge Check, and 45% Final Pie Mastery. You can find additional ALEKS info and tips on Sakai.

8. *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.

9. *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.

10. *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/

11. *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).

12. *Norms of Online and On-Campus Course Proceedings*: For classes the weeks of 1/18 – 1/28, lecture and discussion classes will consist of a live Zoom lecture. Students are encouraged to attend the live lecture. The Zoom chat function will be enabled so students can ask questions in real time. All lectures will be recorded and posted to the class Sakai page for students who are unable to attend the lecture or would like to review the content that was discussed during the lecture.

For classes the weeks 1/31 – 4/29, lecture and discussion classes will be held in the rooms listed above and on LOCUS.

The classroom is to be a safe place to question and explore ideas. Student and teacher voices are important to this work. Collegial disagreement can be a healthy part of this process but must always include respect for all members of the class.

Course activities will be designed to help students reach the goal of learning chemistry content and developing critical thinking skills. This will more often be driven using data and reasoning to discover concepts and solutions rather than the identification and exchange of chemical facts and algorithms.

Students are expected to read individually on their own time outside of class.

13. *Discussion:* The discussion section will be devoted to working on discussion hand-outs and answering questions regarding homework problems. The discussion class will be used to discuss how to answer these problems.

14. *Panopto and Recorded Lectures:* 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 course has concluded. *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.

15. *Copyright and Intellectual Property:* All material disseminated to the class (lectures, discussion worksheets, quizzes, exams) are copyrighted and the Intellectual Property of the class's Instructor. Students cannot share, upload, or distribute in any way the material presented in the class to any person who is not enrolled in the class without the Instructor's written permission. All materials distributed to the class will become unavailable to students in the class when the course has concluded.

16. *Students 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.

17. *Academic Honesty:* 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. Any students caught cheating will, at the very minimum, receive a grade of "zero" for the exam that was submitted and this grade cannot be dropped. Depending on the seriousness of the incident, additional sanctions may be imposed.

18. *Strategies and Suggestions:*
- The best method of learning organic chemistry is to work the assigned problems and write out the answers. *Then* check your answers versus the Answer Key.
- Study at least 10 hours per week and maintain a steady pace of studying. Organic chemistry continually builds, like a language, so studying some every day is most effective.
- Skim the current chapter before the corresponding lecture, so that you will be aware of the topics to be covered.

19. *Practices for Success:* Supporting claims with evidence, making applications, solving and analyzing problems, and using chemical principles to explain phenomena are critical skills in the field of chemistry. The development of these skills is not without some frustration, but it carries the reward of deepening one's ability to think critically and solve problems in any field. The use of targeted, guiding questions, regularly scheduled work, and strategic study plans can greatly assist the learning of chemistry. With such a focus, hopefully any frustration will quickly turn to appreciation and fascination for the relevance and connectedness of chemistry in your life and within the world around you. Solving and analyzing problems is the most important feature of this work. If, at any time, you need assistance framing such plans for your work in chemistry, please do not hesitate to ask the instructor.

20. *Tutoring:* The tutoring Center at the university offers free tutoring to students. To see the complete tutoring schedule and find additional information, visit the Tutoring Center webpage at www.luc.edu/tutoring

21. *Office Hours:* 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.

22. *Email:* 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 224-014" in the subject line. Emails that are sent Monday – Friday will be answered within 24 hours. Emails sent on Saturday, Sunday, or doing breaks will be answered within 48 hours. This policy applies to the Instructor, Teaching Assistant, and Supplemental Instructor.

23. *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.

24. *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.

25. *Harassment (Bias Reporting):* It is unacceptable and a violation of university policy to harass, discriminate against or abuse any person because of his or her race, color, national origin, gender, sexual orientation, disability, religion, age or any other characteristic protected by applicable law. Such behavior threatens to destroy the environment of tolerance and mutual respect that must prevail for this university to fulfill its educational and health care mission. For this reason, every incident of harassment, discrimination or abuse undermines the aspirations and attacks the ideals of our community. The university qualifies these incidents as incidents of bias.

In order to uphold our mission of being Chicago's Jesuit Catholic University-- a diverse community seeking God in all things and working to expand knowledge in the service of humanity through learning, justice and faith, any incident(s) of bias must be reported and appropriately addressed. Therefore, the Bias Response (BR) Team was created to assist members of the Loyola University Chicago community in bringing incidents of bias to the attention of the university. If you believe you are subject to such bias, you should notify the Bias Response Team at this link: http://webapps.luc.edu/biasreporting/

Calendar portion revised 1-12-22

General Chemistry 101 Tentative Lecture Schedule (subject to change)

1-18	1	Introduction: Matter and Measurement
1-20	1/2	Introduction: Matter and Measurement/Atoms, Molecules, and Ion
1-25	2	Atoms, Molecules, and Ions
1-27	2	Atoms, Molecules, and Ions
2-1	3	Stoichiometry: Calculations with Chemical Formulas and Equations
2-3	3	Stoichiometry: Calculations with Chemical Formulas and Equatioions
2-8	4	Reactrions in Aqueous Media
2-10	--	**EXAM I (Chapters 1-3 or as announced)**
2-15	4	Reactions in Aqueous Media
2-17	4/5	Reactions in Aqueous Media/Thermochemistry
2-22	4	Reactions in Aqueous Media
2-24	5	Thermochemistry
3-1	5	Thermochemistry
3-3	5	Thermochemistry
3-8	--	*Spring Break!*
3-10	--	*Spring Break!*
3-15	6	Electronic Structure of Atoms
3-17	6	Electronic Structure of Atom
3-22	6	Electronic Structure of Atoms
3-25	--	**EXAM II (Chapters 4-6 or as announced)**
3-29	7	Periodic Properties of the Elements
3-31	7	Periodic Properties of the Elements
4-5	8	Basic Concepts of Chemical Bonding
4-7	8	Basic Concepts of Chemical Bonding
4-12	9	Molecular Geometry and Bonding Theories
4-14	--	*Easter Break*
4-19	9	Molecular Geometry and Bonding Theories
4-21	--	**EXAM II (Chapters 7-9 or as announced)**
4-26	10	Gases
4-28	10	Gases
5-6	--	**Cumulative Final Exam** **Wednesday, May 4, 7:00-9:00 p.m.**