Chemistry 101, General Chemistry A, Sec 14, 3 credits
Syllabus – Spring 2021

Instructor

Instructor: Dr. Y. Corey Lin, Department of Chemistry & Biochemistry
Office: Flanner Hall 104 (shared office, please knock and wait for a response)
Email: ylin21@luc.edu (email subject line should read "#CHM101-05")
To receive a response: send via Sakai to Instructor (select recipients) and leave subject line blank OR use your Loyola email account and send to ylin21@luc.edu with only Chem 101-005 in subject line. In most cases I will be able to respond within 24 hours during the week when I am on campus
Office Hours: Wednesday 10:30 am -12 pm via Zoom Meeting or By appointment via emails. You are welcome to stop by at any time to see if my door is open* if the campus open to public and check my posted schedule. Occasional extra hours may be announced in class, and online office hours are available by prior appointment via Zoom (link will be posted/emailed, use your Loyola login) or by appointment via email.

Teaching Assistant

Teaching Assistant: Ms.
Email: @luc.edu (email subject line should read "#CHM101-05")
Office Hours: TBD or By appointment via emails.
TA Zoom: Meeting ID:

Course Information

Lecture Room: Synchronous streaming or Pre-record video on Mondays, and Wednesdays at 2:50 - 3:40pm, and Asynchronous video with meeting room on Fridays at 2:50 - 3:40pm
Discussion Room: Synchronous streaming on Wednesday at 1:30 - 2:20 PM
*Starting from 01/18/2021 to 04/30/2020
** Starting from 01/22, all the class on Friday will be asynchronous
Zoom Meeting https://luc.zoom.us/j/89818979659 or ID#: 898 1897 9659

Prerequisites: A satisfactory performance on the Loyola math proficiency test, or completion of Math 117 with a grade of C- or better. A student may be withdrawn from the course at any time if the prerequisites have not been satisfied.
Co-requisite: CHEM 111 (CHEM111 is a separate course with a separate instructor and does not influence your grade in CHM101.)
Exam Dates: 02/10; 03/18; 04/22; 05/0?** (3 midterm exams, and **1 final exam)
**For General Chemistry -101 this spring , the final exam is scheduled for the Thursday of exam week at 5:30pm for all the sections.

Note: **The deadline to withdraw** for the Spring semester on **Mar 29th, 2021****
****(might be varied).**

Course Philosophy and Goals

General Chemistry A (CHM101) is the first course in a two-course sequence for general chemistry. This course surveys the universal concepts and principles underlying all of the disciplines of chemistry and describes how chemistry impacts our daily lives. The goals for this course are for you to understand conceptually how atoms combine to form molecules, how these molecules interact and react with each other, and how these reactions manifest in the real world. To accomplish these goals, we will develop problem-solving skills by utilizing simple mathematical equations as well as reading, interpreting, and comprehending graphs and tables to evaluate problems, make predications, and to draw conclusions. At the end of this course, you will be able to:

- Demonstrate a basic comprehension of basic general chemistry concepts utilizing the correct vernacular and terminology;
- Determine the number of molecules, mass, and moles using stoichiometry, chemical logic, and reasoning;
- Apply periodic trends to predict the physical properties of a given element;
- Determine the electronic structure of a given atom and/or molecules as well as discuss its impact on chemical bonding and reactivity.

Required Materials

1. Chemistry, The Central Science, 14th Edition by Brown, LeMay, Bursten, Murphy, Woodward,Stolzfus: There are hardback and electronic versions of this book. You are welcome to purchaseolder versions of the textbook; however, if there are discrepancies between the versions of text,the newer version is correct. I will also refer to page numbers and tables using the newest version of the textbook.

2. MasteringChemistry Student Access Code: When you purchase the textbook from the Loyola bookstore, verify that it comes with this code. Otherwise, you must obtain it separately from the bookstore or http://www.masteringchemistry.com; do not purchase the "One Key" or the "Student Media Pak" since these don't have access to the graded portions. If you have paid for access to Mastering Chemistry within the last 24 months, your access code is likely valid. The Course ID is: **lin57595**. I suggest you look at the assignment "Introduction to Mastering Chemistry" to learn how to enter answers into Mastering Chemistry.

3. Scientific Calculator: You may use a nonprogrammable, nongraphing calculator on exams in this course. Calculator backs/covers, sharing of calculators, and use of cell phone calculators are not permitted during exams. Use of such a calculator is a breach of the Loyola Academic Integrity Code and will be handled accordingly. Dr. Lin will NOT provide a calculator on the day of the exam; a calculator will be expected in order to complete the problems on the exams. The calculator should be brought to class every lecture to use on discussion problems.

4. Sakai System: Web access is Required for Sakai (also see sakai.luc.edu for additional information/ recommendations), as well as for your Loyola email account regularly for messages sent to the class via Sakai.

   *Copyright/Intellectual Property reminder: course materials provided by your instructors at Loyola University may not be shared outside any course without the instructor's written permission.

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 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.

Course Grading

Your course grade will be determined by the credit you earn on the homework assignments, prelecture assignments, clicker participation, and three exams. All exams are cumulative (as life is a cumulative experience). The opportunities to earn credit towards your final score are:

Homework Assignments (12 of 13)	180 points (15 points for each assignment)
Discussion Quiz on Sakai (12 of 14)	120 points (10 points for each assignment)
In-Class Participation points	20 points
Exam 1	170 points
Exam 2	170 points
Exam 3	170 points
Final	170 points
Total	1000 points

Grading Scale: Below are the minimum points for a particular grade. This scale may be adjusted (to the benefit of the student) at the discretion of Dr. Lin.

Grade	***Course Points***
A	≥925
A-	≥900
B+	≥875
B	≥810
B-	≥780
C+	≥750
C	≥690
C-	≥650
D	≥500

Satisfactory/Unsatisfactory Grades: For midterm grades, late withdraw forms, and other instances where a satisfactory/unsatisfactory grade is required, grades of C- and above will be considered satisfactory, and grades of D and below will be considered unsatisfactory.

Homework Assignments: There are a total of 12 homework assignments with the 11 highest scores counting towards your grade. There are no make-up homework assignments. A 10% per hour penalty is assessed for late homework assignments. Homework assignments are administered on MasteringChemistry (http://www.masteringchemistry.com) and consist of 22 questions, where each question is worth 1 point. The maximum score for any homework assignment is 15 points; there is an excess of 2 points on each homework assignment to account for ambiguous mastering chemistry questions. The homework assignments are due at 11:59 pm on a given date (see the table below for specific dates). You may use the book and work in groups on these problems. Each student is responsible for their own assignment. The problems are presented in a random

order. Once the due date has lapsed, the homework problems for that assignment will be made available for additional practice.

Discussion Quiz: There are a total of 15 prelecture assignments with the 13 highest scores counting towards your grade. There are no make-up Discussion Quiz; late for the quiz will not be accepted. Discussion quizzes are administered on material and review from the lecture and consist of 6 questions, where each question is worth 1-2 point. The questions are based on the chapter reading.

Exams: There are three exams in this course, which will be administered in class as indicated on the course schedule and on the first page of the syllabus. Approved absences from exams require notification with documentation prior to the regularly schedule time of the exam for known conflicts (university functions, religious holidays, etc.). For unforeseeable circumstances (illness, personal emergency, etc.), official documentation is required. Dr. Lin is the sole arbiter of what constitutes an approved absence. With an approved absence, the average percentages of the other 2 exams will be used to determine the grade for the missed exam. This option can only be used once during the semester and *not* for the third exam. Any absence from an exam without prior approval for a known conflict or a documented excuse from an unforeseeable circumstance will result in a grade of zero for that exam. Once a student begins an exam, you may not leave the lecture hall the exam is completed. Once a student turns in a completed exam, tardy students will not be able to begin the exam.

Midterms: 60 minutes, Check the schedule as the attached in the end of the syllubus. It is in your best interest to prepare for and take all exams

Final: 2 hours, Dec 10th , *Mandatory: a missed final exam will result in a course grade of F*. The final exam must be taken on the date scheduled per College of Arts and Sciences policy.

Exam Procedures

Phones, tablets, wireless devices, etc are not permitted. If seen or heard, device will be confiscated along with exam copy and student will be dismissed. Seating arrangements may be altered before and during the exam. Show up early with three items: (1) your Loyola ID, visible on desk to be checked; (2) working pencil(s); (3) working approved calculator (www.actstudent.org/faq/calculator.html), with the memory cleared, to be checked, extra batteries are recommended. All jackets, bags, loose accessories, etc must be left at the front of the classroom. Once the exam is distributed, if you exit the room (quietly, please), for any reason before time is up, your exam is complete and will be collected. I will return your midterm exam scoring sheets *during the discussion periods or in office hours* (copies are kept) and the exam questions will be posted on 4th floor Flanner by the elevators. Scoring errors must be brought to my attention in person no later than one week after the exams are returned. The final exam cannot be returned.

Extra Credit: **There will be one opportunities for extra credit for this course in lecture as the popup quiz or participation activity (TBD).**

Grading Disputes: If you wish to dispute a score for an assignment, you must meet with Dr. Lin during office hours no later than two weeks after the graded work is due. Grades outside of this window will be considered final. Students must put disputes in writing and point to specific instances in the evaluation of the assignment is not in agreement with the rubric/requirements. Limit disputes to no more than 1 page.

Office Hours

Office hours are times when Dr. Lin will be available in his office to answer specific questions related to the course. To make effective use of Dr. Lin's office hours, please bring specific problems and questions as well as attempted work when visiting office hours. If a student would like to meet with Dr. Lin at times outside of his office hours, please make an appointment at least a week prior so office hours maybe rescheduled.

Academic Dishonesty

Academic dishonesty, such as cheating on exams, will be handled as infractions of the Loyola University Honor Code and with a zero tolerance policy. Punishment for cheating may range from receiving an F grade for the assignment to receiving an F for the course and possibly suspension and/or expulsion from the University. Students may appeal the instructor's decisions through university channels. Please familiarize yourself with Loyola University's academic policies and regulations.

Students with Disabilities

Students with disabilities who seek reasonable accommodations in the classroom or other aspects of performing their coursework must first register with the located in **Student Accessibility Center (SAC) located in Sullivan Center, Suite 117 6339 N. Sheridan Road Chicago, IL 60660**. SAC staff members work with students to obtain required documentation of disability and to identify appropriate accommodations as required by applicable disability laws including the Americans with Disabilities Act (ADA). After receiving all necessary documentation, the SAC staff determines whether a student qualifies for services with the SAC and if so, the accommodations the student requires will be provided. SAC staff then prepares a letter for the student to provide faculty advising them of approved accommodations. The student will receive the accommodation after the letter is delivered by the student in person or electronically. For further information, contact the SAC by phone (773)508-3700, e-mail: sac@luc.edu, or visit the SAC website https://www.luc.edu/sac/ or www.luc.edu/csaa.

Military Students

Military and veteran students may need both physical and academic accommodations and may contact the SAC or CASS to find further information. Military and veteran students who return from combat exposure may be utilizing the post 9/11 GI bill to continue postsecondary education goals.

Student Athletes and Students Involved with University Activities
You must meet with Dr. Lin during his office hours during the first two weeks of the semester so your individual needs and accommodations can be made. Contact Dr. Lin by email to schedule an in person appointment if you cannot make Dr. Lin's office hours. Failure to meet with Dr. Lin will result in no accommodations for the remainder of the semester and you will be responsible for any exams. Any documentation that requires an instructor's signature must be presented during office hours or by appointment (*not before or after lecture*) to allow sufficient time to review grades, etc., as required by such activity. Please see Dr. Lin if you have any questions concerning these policies.

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/athleteadvising/attendance.shtml)

Academic Courtesy
Lectures begin at 9:30 am and will end at 10:20 am on Mondays, Wednesdays, and Fridays. It is expected that all students will be in class on time, remain until dismissed, and be fully engaged. If you are late to lecture, enter using the doors at the back of the lecture hall and do no enter at the front of the classroom. If you must to leave early, speak with Dr. Lin prior to class and wait for a natural break to leave using the doors at the back of the lecture hall so as to minimize disruption to the rest of the lecture. Students with cell phones and/or other electronic devices that ring during class and/or other disruptive behavior may receive a penalty, per occurrence, to their overall course score. Electronic cigarettes are prohibited in the lecture hall. As a courtesy to other students, disruptive students may be asked to leave the class.

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.

Tentative Lecture and Exam Schedule

Please note that while the dates for certain chapters may be adjusted, the dates for the examinations will not change.

Week	Dates	Notice!	Monday Wednesday Friday
1	Jan 19, 21	First Day of the semeste	Chemistry Introduction & Review of Units, Conversions and Problem-Solving Scales, Representations and Properties of Matter (Chapter 1) Atoms & Atomic Structure (Chapter 2)
2	Jan 25, 27, 29		Isotopes, Masses (Chapter 2), The Mole (Chapter 3) Nuclear Chemistry, Synthesis of the Elements, Nuclear Stability, Radioactivity Radioactive Decay, Nuclear Transmutations (Chapter 21)
3	Feb 1, 3, 5		Fission & Fusion (Chapter 21) Periodic Table, Molecules, Chemical Formulas & Representations, Ions, Compounds, Formulas & Nomenclature (Chapter 2)
4	Feb 8, 10, 12	Feb 12th 1st Spring break	Formula Weights, Molar Masses, Counting particles & moles, Mole Ratios & Formula Analysis (Chapter 3) **EXAM I on Wednesday 02/10** (all topics thru 2/08)
5	Feb 15, 17, 19		Chemical Equations & Reactions, Stoichiometry: applying mole ratios to reactions Limiting Reactants, Excess Reagents, Reaction Yields (Chapter 3)
6	Feb 22, 24, 26		Solutions, Electrolytes, Dissolution, Solubility, Acids & Bases, Precipitation, Exchange Reactions, Ionic Equations, RedOx Reactions (Chapter 4)
7	Mar 1, 3, 5		Concentration & Molarity, Solution Stoichiometry (Chapter 4) Energy, Thermodynamics, Heat, Enthalpy, Heat Transfer (Chapter 5)
8	Mar 6-10	**no classes - SPRING BREAK**	
9	March 14, 16, 18		Hess's Law, Formation Enthalpy, Bond Enthalpy (Chapter 5) Waves, Photons, Energy, Quantization (Chapter 6) **EXAM II on Friday 03/18** (topics thru 3/16, focus on new and cumulative material)
10	March 21, 23, 25		Atomic Line Emission Spectra, Hydrogen Atom, Quantum Mechanics, Orbitals (Chapter 6) Electron Configurations (Chapters 6, 7)
11	Mar; Apr 28, **30**, 1	**Last Day to drop !!!**	Effective Nuclear Charge & Periodic Properties (Chapter 7) Lewis Symbols, Bonding, Octet Rule (Chapter 8)
12	April 4, 6, 8		Lewis Structures, Bond Polarity & Partial Charges, Formal Charges, Resonance Contributors, Octet Exceptions, Bond Properties (Chapter 8)
13	April 11, 13, 15		Molecular Shapes, VSEPR Model Geometry (Chapter 9)
14	April 18, 20, 22		Geometry & Molecular Polarity Valence Bond Theory, Hybrid Orbitals, sigma and pi bonding (Chapter 9) **EXAM III on Friday 04/22** (topics thru 4/20, focus on new and cumulative material)
15	April 25, 27, 29		Gas Properties, Gas Laws, Ideal Gas Law Applications Kinetic-Molecular Theory, Real Gases (Chapter 10)
FINAL EXAM Cumulative & Comprehensive Date & Time: TBD			

Note: Dr. Lin reserves the right to change the syllabus to improve the classroom experience.