

# Chemistry 101

Fall 2018

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Course: Chemistry 101	Instructor: Prof. Jacob Ciszek
Lecture (All): Monday, Wednesday, Friday 11:30A-12:20P Flanner 133	Flanner Hall 122 Phone: (773) 508-3107
Discussion (002): Friday 12:35-1:25P Flanner 105	E-mail: jciszek@luc.edu
Discussion (003): Friday 1:40-2:30P Flanner 105	Textbook: Chemistry the Central Science (14 <sup>th</sup> ed.) by Brown, LeMay, et al.
Website: Sakai (sakai.luc.edu)	Online HW: MasteringChemistry

**Course Philosophy:** While every student may not enter the class with the intent to become proficient in chemistry, I strongly feel that my role as a professor is to get you to that point. Thus the expectations of you the student is through hard work, attending class, and completion of the homework you will obtain this proficiency and do well in the course. My role is to provide you with the information and the tools, in a coherent matter, so that solving said homework (as well as the quizzes and exams) are not burdensome.

We have a limited amount of days allotted to class. Thus, it is very important that the class environment is free of distractions. No laptops or other computers are allowed. Cell phone use, including texting, is not acceptable. Please refrain from sitting in the last 8 rows.

**Office Hours:** These consist of 1 or 2 hour(s) during the following time slots (3h total):

Monday 12:30-1:30P

Friday 2:30-4:30P (except 9/28, 10/26)

**Academic Honesty & Discipline:** Honesty is the foundation of the academic system and hence is of the utmost importance. All exam and quiz answers should be exclusively your own work and no outside materials are allowed. In the unfortunate event that a student is caught cheating, 100 points will be deducted from your total grade and you will be brought to the attention of the Department Chair and Dean of the College who will determine if further action should be taken.

**Grading:** For a typical week, three homework assignments are due. Roughly every two weeks, there will be a quiz or an exam.

The role of homework is to refresh the lecture information in your mind and prepare you for quizzes and exams. Homework will primarily be posted on MasteringChemistry with a rare paper assignment. Online homework will be due Monday, Wednesday and Friday at 8:00A. Collaboration on homework is allowed. MasteringChemistry does not necessarily mimic the style of questions on the exam/quizzes, so do not use it for exam prep; its main use is as a quick review of the lecture material and to see which concepts you're having trouble with. Your grade for homework will be the percentage of total points achieved, plus one percent, then scaled to be out of 60 points (example from last year,  $137.2 \text{ pts out of } 169.5 = 81\% + 1\% = 82\%$  or  $49.2/60$ ).

Quizzes are designed such that an average student who works hard and grasps the material should score ~85%. Exams (and the final) are designed so that this same student will score approximately ~75%. This allows motivated students to truly go beyond what is expected and to distinguish themselves, not to penalize those who work as expected.

Discussion points are given for the final portion of the discussion section where you are expected to work through some selected problems in small groups. The purpose here is to work through material presented in lecture. Discussion section may recap earlier material, or introduce difficult concepts for a subsequent lecture.

There are no makeup exams, quizzes, or homework. However, circumstances may occasionally force you to miss one of these, and thus there are mechanisms that minimize the effect on your grade. For discussion points, two of the grades are automatically dropped. For homework, your grade will have 1% added to it (discussed above). One quiz and one exam can be dropped. The last point means two things: 1) you have the ability to miss an exam/quiz should circumstances (illness, wedding, etc.) prevent you from attending. However, if you miss an exam and a quiz, the final becomes a dramatically more important part of your grade (from 24% to 30%). For those of you who do not miss an exam or quiz, I will calculate your grade both with a dropped score and without, and you will receive the higher of the two.

<b>Grading scale:</b>				(w/ dropped exam&quiz)	
Homework:		60		60	A > 90%
Quizzes	4 × 15 pts	60		45	B > 80%
Exams	3 × 100 pts	300		200	C > 70%
Final	150 pts	150		150	D > 60%
Discussion	12 × 4 pts	<u>48</u>	(drop 2 of 14)	<u>48</u>	
Total		618		503	

Note, the intended scale for exams and the final would put the average just above the lowest C. Homework and quizzes will mitigate this a bit. Based on overall class competence the grading scale may be relaxed a little at the end of the semester (certainly no more than a percent). The A, B, C, D scale represents the maximum score you would need for that grade. Pluses and minuses are not indicated in the grading scale but will be given. This will be done according to the natural breakdown of the grade distributions. Expect this to be the closest 2% to the final A-B, B-C, and C-D divisions (e.g. A- is 90 to 92)

**MasteringChemistry:** Homework for the class can be accessed via course number CISZEKCHEM101F18. In addition to acting as the online homework system, MasteringChemistry also has a “study area” available with additional resources.

**Other:** Simple calculators will be provided to you on quiz/exam days. You will not use your own.

**Schedule (including approximate page numbers):**

8/27	Matter. Syllabus	P1-11		
8/29	Measurements, units, convert	P17-33	H1a,b	
8/31	Changes. Applications of chemistry	P5,6, 12-14	H2	
9/3	Labor Day			
9/5	Atoms: precedence & weight.	P44-54		Q1
9/7	Periodic table. Molecules & compounds	P55-60	H3	
9/10	Ions. Naming	P60-73	H4	
9/12	Nucleus, radioactive particles, change	P902-912	H5	
9/14	Nuclear applications.	P917-933	H6	
9/17	Nuclear conclusions. Review		H7	
9/19	Exam 1			E1
9/21	Reactions (1)	P85-109		
9/24	Reactions (2)	P85-109	H8	
9/26	Reactions (3)	P85-109	H9	
9/28	Solutions	P122-125		Q2
10/1	Precipitation, acid bases (basics)	P126-136	H10	
10/3	Interlude: oxidation/reduction	P137-143	H11	
10/5	Concentrations, conversions, stoichiometry	P144-152	H12	
10/8	Mid-semester break			
10/10	Review		H13	
10/12	Exam 2			E2
10/15	Introduction to energy. Simple E transfer	P164-175		
10/17	Tracking energy: enthalpy, Hess's law, $H_f$	P176-189	H14	
10/19	Calorimetry, Bond Energy	P178-194	H15	
10/22	Energy applied: foods & fuel	194-199	H16	
10/24	Electrons (and matter) as a wave	P214-218		Q3
10/26	Bohr model. Wave/math applied: soln.=orbital	P219-230	H17	
10/29	Orbital shapes, configuration	P231-240	H18	
10/31	Periodic predictions. Similarities in columns	P241-245, 259-287	H19	
11/2	Chapter 6-7 wrap up		H20	
11/5	Fundamentals of a bond	P300-307	H21	
11/7	Bonding complexities	P308-15	H22	
11/9	Bonding complexities (2)	P308-315		Q4
11/12	Bonding formalisms	P315-326	H23	
11/14	Molecular geometry: importance and intro.	P340-345	H24	
11/16	Complexities: lone pairs, expanded shells, etc	P346-353	H25	
11/19	Complexities: hybrids, etc.	P354-360	H26	
11/21	Thanksgiving			
11/23	Thanksgiving			
11/26	Complexities: multiple bonds, resonance	P361-68, 377-79	H27	
11/28	Review		H28	
11/30	Exam 3			E3
12/3	Gases and their calculations	P396-409		
12/5	Gas: application and behavior	P410-422	H29	
12/7	Gas reactions practice/Class choice		H30	
<b>12/10</b>	<b>Final (cumulative) 1:00-3:00P</b>			

## **Loyola Formal Statements:**

**Final Exam-** The University sets the schedule for all final exams. The final will be held on: 12/10 at 1-3P. You will have exactly 2 hours to complete the exam. Additional time will not be granted, even if you arrive 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 a student reports having four final examinations scheduled for the same date, students should be directed to e-mail a petition to Lester Manzano, Assistant Dean for Student Academic Affairs, CAS Dean's Office (lmanzan@luc.edu).

**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 with Disabilities** If you have any special needs, please let me know in the first week of classes. The university provides services for students with disabilities. Any student who would like to use any of these university services should contact the Services for Students with Disabilities (SSWD), Sullivan Center, (773) 508-3700. Further information is available at <http://www.luc.edu/sswd/>.

**Loyola University Absence Policy for Students in Co-Curricular Activities:** 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 (develop standard form on web) 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/athleteadvising/attendance.shtml>)