Chem 102-016/ Spring 2019/ Loyola University Chicago/ Syllabus/ A. Fitch

Course Content & 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.

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

- Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)
- Learning to *apply* course material (to improve thinking, problem solving and decisions)
- Gaining a broader understanding and appreciation of intellectual/cultural activity (music, science, literature, etc)
- Learning how to find, evaluate, and use resources to explore a topic in depth

Lecture TTh 8:30-9:45 am Cuneo Hall 210

Discussion You must attend the section for which you are registered as rooms are assigned on capacity by the college
Chem 102-017 Tuesday 10:00-10:50 am Dumbach Hall Room 119
Chem 102-018 Tuesday 11:30-12:20 pm Flanner Hall Room 7

Instructor Dr. Alanah Fitch
Office Flanner Hall 418
Office Hours: 1:00-2:00, MWF, Bremner Center, Centennial Forum, Northwest of open area (others by appointment at my office) The center is labeled the Resource Center. If by the 3rd week of the semester I have had not students attending office appointment hours and location may be changed. In the event that I am unable to attend a notice will be placed on Sakai.

Email To receive a response use your Loyola email account and send to afitch@luc.edu with only Chem 102 in subject line. Other email titles may not be answered. Emails will be answered within 3 days. If it is urgent please call 773-508-3119. Collective emails will be sent to the class via Sakai (to your Loyola account). Emails are NOT answered over the weekend.

Text: The textbook/eText is Required for class (*Chemistry The Central Science*, Brown et al, 14th edition); the student guide and solutions manual are Optional. Any on-line learning course is also optional.

Supplemental Instruction has been scheduled with the tutoring center. The SI leader (Mohammed Abdul Sami, mabdulsami@luc.edu) attends class and follows the lectures so is competent to help students learn to study and solve problems. Sessions can be found at https://www.luc.edu/tutoring/

Class attendance and active participation is expected of all students; **there are no make-up classes or assignments**. You are responsible for all material presented handed out, or recommended. If you miss a class for any reason, contact a classmate promptly for notes and topics covered. Prepare for lecture by reading ahead in the textbook and working end of the chapter problems.
No early exams, no make-ups, no exceptions.

No early discussion problems out of discussion section, no make-ups, no exceptions

Sakai will be used to post

- Syllabus
- Study guides and advice
- Announcements
- Lecture power points. Those power points are **!!!!!subject to change!!!!!!!** Only final version is posted, so note taking is advisable. Final ppt should be cross compared with your lecture notes. The power points are best used as ppt, as re-reading as opposed to downloading and pdf as they are constructed to unfold the math the way it would be written on a white board.
- No grades are posted. Students are expected to keep track of their own exams and attendance. Exam calculations are shown below.

Extra Credit: A chance to obtain extra credit is offered. The magnitude of the extra credit possible is 10 points which constitutes 2.37% bump and therefore is worth doing. Instructions are not offered but an exact example is given. Follow the example religiously.

Discussion Section: Discussion section is intended to foster the establishment of study groups, to model how to work problems in a supportive environment, and to present students with a range of problems consistent with those that will be provided on exams. A group sheet showing work is proof of attendance and will count toward the 44 points possible for the semester. There are 11 discussion periods as 3 are omitted as on Exam date. One discussion may be dropped. Each discussion is worth 4.4 points. BRING YOUR TEXTBOOK TO CLASS AS IT WILL BE THE PRIMARY TOOL USED!!!!!

Exam Tools: Each student will need a calculator approved for use on the ACT exam are permitted – all calculator memory must be cleared prior to use on exams. Calculators cannot be shared between students. Cell phones are not permitted during the exam. Use is considered dishonest (see below for consequences).

Cheat Note Card: No equation or constants are provided with the exam. Therefore students **must** bring a 3x5 note card, **single sided**, cheat card with name printed upper right hand corner last name first. The cheat note card may contain any information the student feels will be helpful but there should be no worked problems nor should there be a fully written essay. Use of worked problems will result in a grade of "0" on that exam. Failure to turn in a note card (following the rules set here) with the exam will result in a **3 point penalty**. If you turn in a note card but with no name it will constitute a failure to turn in.

Exam Content

Exam problems will consist of selections of problems from discussion (numbers changed), problems from the discussion that are "inverted", and problems non-worked but at the end of the chapter. The textbook is a student resource: Problems at the end of chapter are divided by section and progress from easy to hard to difficult. Students that can work "easy" problems likely will receive a "C". Students that can work "hard" problems will likely receive a "B". Students than can work "difficult or challenge" problems will likely receive an "A". Previous experience indicates that "A" students work 10 problems a night. Also "fair game" for exam problems are those worked within the chapter itself and ppt problems.

Exam Format: Exams consist of multiple choice and 1 or 2 long answer questions which will appear at the end of the exam. The multiple choice will be graded mechanically and the essays by hand. The honest statement must be copied on the back of the exam (see below).

Exam Grading: No score may exceed 100 points in the event of an adjustment such as might occur due to curving. (Grades over 100 may be obtained if there is an extra credit problem.)

Grading In the event that the class exam average is 10 to 15 points below a 52% for a C grade a curve may be applied. The curve is not automatic. The format of the curve will be announced after the exam in class and posted to Sakai. You will add the points from the curve to your raw exam points to get your final exam score as grades. Letter grades are only assigned to your total end of semester score, not to individual assignments, quizzes or exams. Total end of semester **scores are not rounded up** after calculation.

Course Grades

Method 1

Metric	points	%
Discussion	21	4.99
Exam 1	100	23.75
Exam 2	100	23.75
Exam 3	100	23.75
Final	100	23.75
Total	421	100

Method 2

Metric	points	%
Discussion	21	4.99
Exam 1	150	35.63
Exam 2	150	35.63
Final	100	23.75
Total	421	100

Grade	College	College %	This class %	Pts out of 421	Pts out of 211
A	4	100	95	400	200
A-	3.67	91.75	92	387	194
B+	3.33	83.25	83	349	175
B	3	75	75	316	158
B-	2.67	66.75	67	282	141
C+	2.33	58.25	58	244	122
C	2	50	50	211	106
C-	1.67	41.75	42	177	89
D+	1.33	33.25	33	139	70
D	1	25	25	105	53
F	0	0	0	0	0

A total point calculator excel sheet is posted in Sakai.

Example Student Calculation Midterm grade:
Student A first exam raw score was rounded to 69 points, but unfortunately he/she did not follow instructions and failed to put name in upper right hand corner, printed last name first, second name. As a result, he/she obtained a 3 point penalty for Exam 1. The average of the exams was close to the expected average dictated by the college (50%) so no curve was applied. And, after the exam was handed back, no students pointed out errors in marking the key so no grading error adjustments were made. Thus no curve or correction was applied Exam 1. In Exam 2 the student obtained a raw score of 62. After handing back the exams a student found a grading error on the scan tron key of 2 points. In addition, even after accounting for the 2 points, the class average was low so the instructor made a choice to curve the scores by 4. As a result, a total adjustment of 6 points was made. The instructor announced the adjustment and posted the amount to be adjusted on Sakai. Thus Student A calculated that their total score on Exam 2 became a 68. Student A chose to miss one discussion. There is a "free" drop of one discussion, so Student A obtained a full attendance record of 5, giving the student 10.5 points for discussion which was rounded to 11. The student turned in the extra credit paper and obtained 7 out of 10 possible points. As a result, the student total grade was 152 which, according to the scale above is a B$^-$.

Metric	Attendance	Raw score	penalty	adjustment	total	possible		
Exam 1		69	-3	0	66	100		
Exam 2		62	0	6	68	100		
Exam 3								
Final								
Discussion	5	Each disc worth:		2.1	11	11	10.5 rounded up	
extra credit					7	0		
				totals	152	211		
				Letter	B-			

EXAM Dates (Will not be changed, plan your cumulative study schedule accordingly)

Exam 1	Tues Feb 5	
Exam 2	Tues Feb 26	
Exam 3	Tues April 16	
Final	Sat May 4	9-11 a.m. (cannot be changed as per university policy, see more below)

Review sessions outside of class prior to exams may be offered. Review sessions are student driven, do not expect hints on what to expect, types of problems etc. Problems that are stumping students will be worked. Munchies will be provided.

Calendar and Scheduled Content
For the College academic calendar please see www.luc.edu/academics/schedules

A tentative schedule is given here and on Sakai, ***subject to change***. We will cover roughly Chapters 11-17, 19-20 during the semester. We will begin with Chapter 11 on the first day of class, but not all textbook sections will be fully covered, so focus first on the material that is directly covered in lecture and assigned for homework, quizzes and recommended problems.

The suggested problems may be worked or discussed in class. They are very likely to constitute problems worked in discussion section on Tuesdays. Students are STRONGLY advised to work all problems for which there are answers in the back of the book in addition to these. 10 problems every night are reported by "A" students. The day they are indicated is associated with the beginning of a new chapter, not a homework due date.

Week	Begins	Chap	Topic	Book Section
Week 1	Tues 1/15	Ch 11	Liquids Intermolecular Forces: **(no discussion)**	
				Sections 11.1-2; 11.4-5
		Prob Chap 11	*45, 46, 84, 85, 96*	
Week 2	Tues 1/22	Ch 12	Solids	Sections 12.1-12.5, 12.7
		Prob Chap 12	*36, 37, 38, 39, 40, 50, 59, 63, 69, 70*	
Week 3	Tues 1/29	Ch 13	Properties of Solutions	Sections 13.1-13.6:
		Prob Chap 13:	*13, 15, 37, 93, 94, 95, 96, 97, 98, 99, 102*	
Week 4	Tues 2/5	**TUES EXAM I Covers Chapters 11, 12, 13 (no discussion)**		
		Ch 14	Chem Kinetics	Sections 14.1-14.2
		Prob Chap 14	*36, 43, 45, 56, 59, 61, 7114.3, 14.19, 14.21*	
Week 5	Tues 2/12	Ch 14	Chem kinetics	Sections 14.3-14.4
		Ch 21	Nuclear Kinetics	Sections 21.1-21.2
		Prob Chap 21	*21.13, 21.35*	
Week 6	Tues 2/19	Ch 14/21	Chem and Nuclear Kinetic	Sections 21.3 and 14.5-7
		Ch 15	Chem Equilibrium	Sections: 15.1-15.7
		Prob Chap 15:	*14, 17, 21, 26, 31, 57, 62*	
Week 7	Tues 2/26	**EXAM 2 Covers Chaps 14, 15, and portions of 21 covered (no discussion)**		
Week 8	**Tues 3/5**	**Spring Break**		
Week 9	Tues 3/12	Ch 16	Acid Base Equilibria	Sections: 16.1-16.11
		Prob Chap 16	*15, 35, 41, 43, 55, 81*	
		MARCH 15 mid-term grades		
Week 10	Tues 3/19	Ch 17	Additional Aspects of Aqueous Equilibria	Section 17.1-2
		Prob Chap 17	*27, 43, 45, 49, 51, 61, 67*	
Week 11	Tues 3/26	Ch 17	Additional Aspects of Aqueous Equilibria	Section 17.3-6
Week 12	Tues 4/2	Ch 19	Chem Thermodynamics	Sections 19.1-19.4
			Prob Chap 19: 25, 41, 48, 51, 55, 79, 80	
Week 13	Tues 4/9	Ch 19	Chem Thermodynamics	Sections 19.5-7
Week 14	Tues 4/16	**TUES EXAM 3: Covers Chapters 16, 17, 19 (no discussion)**		
		Ch 20	Electrochem	Sections 20.1-20.2
Week 15	Tues 4/23	Ch 20	Electrochem	Sections 20.4-6
Sat	Sat 4/4	9-11 a.m.	**FINAL EXAM includes Chap 20!!!**	**(cannot be changed!)**

You will have exactly 2 hours to complete the final 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.

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 e-mail a petition to Lester Manzano, Assistant Dean for Student Academic Affairs, CAS Dean's Office (lmanzan@luc.edu)

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.
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> 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.
Examples of cheating include, but are not limited to:

- Obtaining, distributing, or communicating examination materials prior to the scheduled examination without the consent of the teacher
- Providing information to another student during an examination
- Obtaining information from another student or any other person during an examination
- Using any material or equipment during an examination without consent of the instructor, or in a manner which is not authorized by the instructor
- Attempting to change answers after the examination has been submitted
- Any other action that, by omission or commission, compromises the integrity of the academic evaluation process

You will be asked to sign a statement on each exam of academic honesty consistent with rules established by the university. **Failure to sign this statement on the exam results in 2 points drop in grade. This signature should be included on the back of the scan tron. It will be the same as that shown below.**

Your signature confirms your academic honesty in performance of this test. Cheating is cause for report to the Dean's office and may result in some or all of the disciplines outlined in the student handbook up to and including a failing grade in this class.

The work on this exam is the product of my own work:

Signature:_____

Students with Disabilities Accommodations
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. Accommodations are provided by the Services for Students with Disabilities center, after receiving documentation and allowance of a reasonable time-frame for implementation: minimally, one week in advance of an exam. Accommodations cannot be retroactive. Information for students with disabilities is available at: https://www.luc.edu/sswd/index.shtml

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 (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)

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.

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/

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 obtain a signature from 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.