Chem 102-001 Fall 2018 Syllabus

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.

IDEA 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 MWF 9:20-10:10 am Sullivan Center- Galvin Auditorium

Discussion You must attend the section for which you are registered:
Chem 102-002 Friday 10:25-11:15 am Crown Center Room 140
Chem 102-003 Friday 11:30-12:20 pm Dumbach Hall Room 125

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)
(*No office hours Friday Aug 31)*

Email To receive a response use your Loyola email account and send to afitch@luc.edu with only Chem 102-001 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 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/

Sakai

- Syllabus
- Study guides and advice
- Announcements
- Lecture power points. Those power points are **subject to change** and should be cross compared with your lecture notes. The power points are best used 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.

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

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

Exam Tools: Each student will need a scientific calculator – only calculators 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.

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. 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.

Exam Format: Exams consist of multiple choice and 1 or 2 long answer questions. The multiple choice will be graded mechanically.

Grading Letter grades are only assigned to your total score, not to individual assignments, quizzes or exams. Total **scores are not rounded up** after calculation. 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 difference between the highest grade and 100 will be added to each grade. Any other curve will be announced in class and posted to Sakai.

Method 1

Metric	Points	%
Group Discussion	100	20
Exam 1	100	20
Exam 2	100	20
Exam 3	100	20
Final	100	20
Total	500	100

Cutoffs:	%	Points
A	96	485
A-	94	469
B+	85	426
B	77	385
B-	69	344
C+	60	301
C	52	260
C-	44	219
D+	35	176
D	27	135
F	0	0

Method 2
In the case that an exam is missed (no make-up allowed) the following calculation will be used.

Metric	Points	%
Group discussion	100	20
Exam a	150	30
Exam b	150	30
Final	100	20
Total	500	100

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

Exam 1	Mon Sept 24	
Exam 2	Mon Oct 29	
Exam 3	Fri Dec 7	
Final	Sat Dec 14	1-3 pm (cannot be changed as per university policy, see more below)

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. An individual sheet showing work is proof of attendance and will count toward the 100 points possible for the semester. So there are 12 discussion periods including those that are review sessions. Each discussion is worth 8.33 points. The 100 points will be distributed evenly over the number of discussion sections not devoted to review. Discussion on Friday prior to an exam will consist of a review session. 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.

Midterm grades: Estimated based on total points to date as per grading scale above. Posted in LOCUS on date shown in calendar below.

Calendar and Associated 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 Fridays. 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.

Class dates with bold indicate a discussion section takes place. Note there is no discussion the first week of class. There are a total of 12 discussion sections. One may be dropped leading to a total of 11 discussion sections. Therefore each discussion section is ranked 100/11= 9.09 points.

Class Dates	**Chap**	**Topic**	**Book Section**
Mon Aug 27	Ch 11	Liquids Intermolecular Forces:	Sections 11.1-2:
	Prob Chap 11	*45, 46, 84, 85, 96*	
Wed Aug 29	Ch 11	Liquids Intermolecular Forces:	Sections 11.4:
Fri Aug 31	Ch 11	Liquids Intermolecular Forces :	Sections 11.5:
Mon Sept 3	**Labor Day No Class**		
Wed Sept 5	Ch 12	Solids	Sections 12.1-12.3
	Prob Chap 12	*36, 37, 38, 39, 40, 50, 59, 63, 69, 70*	
Fri Sept 7	Ch 12	Solids	Sections 12.4-12.5
Mon Sept 10	Ch 12	Solids	Sections 12.7

Wed Sept 12	Ch 13 Properties of Solutions	Sections 13.1-13.2:
	Prob Chap 13: 13, 15, 37, 93, 94, 95, 96, 97, 98, 99, 102	
Fri Sept 14	Ch 13 Properties of Solutions	Sections 13.3-13.4
Mon Sept 17	Ch 13 Properties of Solutions	Sections 13.4-13.5
Wed Sept 19	Ch 13 Properties of Solutions	Sections 13.5-13.6
Fri Sept 21	Ch 14/21 Chem and Nuclear Kinetics	Sections 14.1-14.2
	Prob Chap 14 36, 43, 45, 56, 59, 61, 7114.3, 14.19, 14.21	
Mon Sept 24	**EXAM I Covers Chapters 11, 12, 13**	
Wed Sept 26	Ch 14/21 Chem and Nuclear Kinetics	Sections 14.3-14.4
Fri Sept 28	Ch 14/21 Chem and Nuclear Kinetics	
	Ch 14/21 Chem and Nuclear Kinetics	Sections 21.1-21.2
	Prob Chap 21 21.13, 21.35	
Mon Oct 1	Ch 14/21 Chem and Nuclear Kinetic	Sections 21.3-14.5
Wed Oct 3	Ch 14/21 Chem and Nuclear Kinetics	Sections 14.6-14.7
Fri Oct 5	Ch 15 Chem Equilibrium	Sections: 15.1-15.2
	Prob Chap 15: 14, 17, 21, 26, 31, 57, 62	
Mon Oct 8	**Mid Semester Break No Class**	
Wed Oct 10	Ch 15 Chem Equilibrium	Sections: 15.3-15.4
Fri Oct 12	Ch 15 Chem Equilibrium	Sections: 15.5-15.6
Mon Oct 15	Ch 15 Chem Equilibrium	Sections: 15.6-15.7
Wed Oct 17	Ch 16 Acid Base Equilibria	Sections: 16.1-16.3
	Prob Chap 16 15, 35, 41, 43, 55, 81	
Fri Oct 19	Ch 16 Acid Base Equilibria	Sections 16.4-16.5
Mon Oct 22	Ch 16 Acid Base Equilibria	Sections 16.6-16.7
Wed Oct 24	Ch 16 Acid Base Equilibria	Sections 16.8-16.9
Fri Oct 26	Ch 16 Acid Base Equilibria	Sections 16.10-16.11
Mon Oct 29	**EXAM 2 Covers Chaps 14, 15, 16**	
Wed Oct 31	Ch 17 Additional Aspects of Aqueous Equilibria	
	Mid term grades reported.	
Fri Nov 2	**Last Day to Withdraw**	
	Ch 17 Additional Aspects of Aqueous Equilibria	Sections 17.1
	Prob Chap 17 27, 43, 45, 49, 51, 61, 67	
Mon Nov 5	Ch 17 Additional Aspects of Aqueous Equilibria	Section 17.2
Wed Nov 7	Ch 17 Additional Aspects of Aqueous Equilibria	Section 17.3
Fri Nov 9	Ch 17 Additional Aspects of Aqueous Equilibria	Section 17.4
Mon Nov 12	Ch 17 Additional Aspects of Aqueous Equilibria	Section 17.5
Wed Nov 14	Ch 17 Additional Aspects of Aqueous Equilibria	Section 17.6
Fri Nov 16	Ch 19 Chem Thermodynamics	Sections 19.1-19.2
	Prob Chap 19: 25, 41, 48, 51, 55, 79, 80	
Mon Nov 19	Ch 19 Chem Thermodynamics	Sections 19.3-19.4
Wed Nov 21	**Thanksgiving**	
Fri Nov 23	**Thanksgiving**	
Mon Nov 26	Ch 19 Chem Thermodynamics	Sections 19.5
Wed Nov 28	Ch 19 Chem Thermodynamics	Sections 19.6-19.7
Fri Nov 30	Ch 20 Electrochem	Sections 20.1-20.2
	Prob Chap 20 TBA	
Mon Dec 3	Ch 20 Electrochem	Sections 20.5
Wed Dec 5	Ch 20 Electrochem	Sections 20.4&20.6
Fri Dec 7	**Exam 3: Covers Chapters 17, 19, 20 (no discussion)**	
Wed Dec 12	Study Day	
Sat Dec 15	1-3 p.m. **FINAL EXAM (cannot be changed!)**	

Final:

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.

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)

Other IMPORTANT Information

Academic Integrity

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 results in 2 points drop in grade.**

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:_____

The University Policy on academic integrity are given at http://www.luc.edu/cas/advising/academicintegritystatementStudents are expected to read this state and abide by it. Cheating includes, but is not limited to, such acts as

- 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
- Unauthorized collaboration, or the use in whole or part of another student's work, on homework, lab reports, programming assignments, and any other course work which is completed outside of the classroom
- Falsifying medical or other documents to petition for excused absences or extensions of deadlines
- Any other action that, by omission or commission, compromises the integrity of the academic evaluation process

Cheating will be flagged during exams. Two flags on cheating and a grade of F will be assigned to the exam and the event reported The Chair of The Department of Chemistry & Biochemistry who will decide on any additional steps.

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.

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/

Co-Curricular Activites:
Students missing classes while representing Loyola University Chicago in an official capacity may avail themselves of the lecture notes posted on Sakai. Students should discuss with me the potential consequences of missing lectures and the ways in which they can be remedied. Students must provide the instructor with proper documentation. The students are referred to the following web site.
https://www.luc.edu/athleteadvising/away_game.shtml