



**Online General Chemistry A, Lecture/Discussion
CHEM 101
Summer 2011
Loyola University Chicago**

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Course Description

The purpose of CHEM 101 is to introduce students to fundamental principles of chemistry. Specific areas addressed are: practices of chemical analysis; atomic structure and periodic properties; chemical bonding; chemical reactions, energy, and their quantitative relationships, and; aspects of states of matter. Historical and current developments in chemistry as well as real-world problems that chemists address will be incorporated into the course.

The emphasis of this course is on understanding and prediction rather than on memorization. This means that students must foster their problem solving skills and their ability to communicate results effectively. It is not enough to know *what* happens, the student is also expected to be able to explain *why* it happens.

This section of CHEM 101 will be conducted completely online. Estimated weekly synchronous time is six hours. Additional time will be necessary for course preparation and completing homework, assignments, quizzes, and tests.

Synchronous Meeting Times M, W, F 12-2 pm CST

Required Resources

- (1) Brown, T. L., et. al (2012). *Chemistry: The Central Science, 12th ed (with MasteringChemistry)*. Pearson Prentice Hall. ISBN 978-0-321-74105-9.
- (2) Mood, R.S. & Farrell, J.J. (2008). *Chemistry: A Guided Inquiry, 4th ed.* John Wiley & Sons, Inc. ISBN 978-0-470-12926-5
- (3) *Blackboard Connection*, blackboard.luc.edu

Connection to the “Hungers” of Loyola University’s Transformative Education

Based on the analysis of real-world scenarios and problems associated with the study of chemistry, this course seeks to assist each student in fostering hungers associated with the University’s model of transformative education¹. These hungers include:

- *A Hunger for Integrated Knowledge:* Students today appreciate having so much information at their fingertips, and yet, they long for a more robust formation that integrates their intellectual, affective and volitional capacities and helps them to appreciate how the varied subjects and disciplines fit together;
- *A Hunger for a Moral Compass:* Students today experience the limitation of a moral discourse that focuses almost exclusively on individual rights while almost ignoring the responsibilities we have to each other; not looking for recipes, our students display desire to acquire an ethical foundation and a method for moral discernment;
- *A Hunger for Civic Participation:* After years of experiencing a certain disconnection from the political process, young people today display a new strength of passion and level of commitment; there is a sense among them that they have found their voice as change agents, and now they long to participate more actively;
- *A Hunger for a Global Paradigm:* Having seen the limitations and the dangers of ethnocentrism, our students want to embrace a more cosmopolitan perspective; they see very clearly that each of us dwells in many communities, from the community of our birth to the community of the human family, and we have duties to all of them;
- *A Hunger for an Adult Spirituality:* Tired of the polarized debates between a lifeless secularism on the one hand, and a dogmatic fundamentalism on the other, our students long for a spirituality that sustains and empowers, one in which there is ample room for both faith and reason.

¹<http://www.luc.edu/transformatived/>

Academic Honesty

Academic honesty is the cornerstone of any university and of the way in which scientists do research. It is an expression of interpersonal justice, responsibility and care, applicable to Loyola University faculty, students, and staff, which demands that the pursuit of knowledge in the university community be carried out with sincerity and integrity. Academic dishonesty is one of several possible reasons why a student may be dismissed from the course, program, and the University. For specific policies and procedures see: http://www.luc.edu/education/academics_policies.shtml#honesty

Online Information & Technical Assistance

Technology advances have changed the traditional classroom structure. Your participation in this online section of general chemistry will require a slightly different set of skills and practices by you than may be apparent from the usual classroom setting. The technology needs and support for you while participating in this online course can be found at <http://www.luc.edu/onlinelearning>. If you have any questions or need for clarification you may contact your instructor or the Loyola IT assistance desk.

Accessibility

Students who have disabilities which they believe entitle them to accommodations under the Americans with Disabilities Act should register with the Services for Students with Disabilities (SSWD) office. To request accommodations, students must schedule an appointment with an SSWD coordinator. Students should contact SSWD at least four weeks before their first semester or term at Loyola. Returning students should schedule an appointment within the first two weeks of the semester or term. The University policy on accommodations and participation in courses is available at: <http://www.luc.edu/sswd>

Harassment

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. For specific definitions of discrimination, abuse, and harassment refer p. 25-26 in the Loyola University Chicago Student Handbook, located at: <http://www.luc.edu/studentaffairs/pdfs/LoyolaStudentHandbook2006.pdf>
If you believe you are subject to such harassment, you should notify your instructor. If you believe you are subject to harassment by your instructor, contact the Associate Dean of Academic Affairs at 312-915-6464.

Course Evaluation

Grades will be assigned in the course according to the following sources:

Criterion	Maximum Percent Value
<i>CHEM 101 – Lecture (3.0 credits)</i>	
Quizzes & Online Homework Sets	25 %
Online participation, group responses and reports	20 %
Tests	30 %
Final Exam	25 %

Quizzes will be administered at the beginning of each synchronous whole class session. Content from the previous synchronous sessions (whole class and small group) will be the source of material on each quiz. The two lowest quiz scores will be dropped from your course evaluation.

Online Homework Sets will be assigned weekly during the summer session. Submitted responses must be the result of your individual effort and synthesis and are due by the beginning of the first synchronous session of each week.

Online participation, group responses and reports will be an important part of the class. This work will be a combination of individual and group work. Students must be present during synchronous sessions in order to receive credit for these assignments. The two lowest scores on these assignments will be dropped from your course evaluation.

Tests will be administered at two different points during the course. Each will primarily reflect the content and concepts developed during prior class sessions. Tests will be available for a limited timeframe online. Completed responses to tests must be returned prior to the end of this timeframe.

The *Final Exam* will be designed to assess students comprehensive knowledge of concepts developed during the work of the semester. Like the tests, the final will be available for a scheduled and limited timeframe. Completed responses to the final must be returned prior to the end of this timeframe.

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. To do this, one may have to assess, evaluate, and possibly revise approaches to learning. The use of targeted, guiding questions, a regular study schedule, 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 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 your instructor for assistance.

Norms of Course Proceedings

Online sessions are to be a safe opportunities 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 basic chemistry principles while also developing critical thinking and problem solving skills. The pathway to accomplish this goal is driven by the use of data, developing models or ideas, and making interpretations in order to discover chemical concepts. The identification and repetitive use of chemical facts and algorithms is a necessary part of your work, but additional levels of understanding are also essential in order to reach the goals of this course.

Synchronous sessions will begin and end on time. All students should attend the scheduled synchronous sessions and participate in discussions. Multiple absences from these sessions could affect one's ability to learn chemistry during this summer session. Anticipated absences should be discussed with the instructor two class days before the absence. Proper documents may be requested to verify the reason for any absence. This is particularly relevant to days missed that include an in-class assessments for which a student is asking for a make-up.

Students are to take tests and exams when scheduled. Make-up tests and/or exams will be given only in the following cases: 1) illness or hospitalization requiring physician's care; 2) death of an immediate family member; 3) unavoidable court date; 4) religious holiday which prohibits normal activity such as attending class; 5) representing Loyola in an official campus activity off-campus (e.g., model UN, debate team, intercollegiate athletics among others). All absences from tests and exams will require written and verifiable documentation. Please note that travel, unless for one of these five areas above, is not an acceptable reason for missing exams or submitting late assignments.

Synchronous sessions need your full attention and you should place yourself in an appropriate environment to do so. The use of other devices (mobile phones, mp3 players) should be used in an appropriate and professional manner. These devices should not distract other participants synchronous sessions. For this reason, it is highly recommended that you utilize a headset mic to minimize any feedback or interference during synchronous sessions.

Email messages between the professor and students in the course should also be respectful, appropriate, and professional. Response time to email messages is acceptable within 24-48 hours.

Completed course assignments must be submitted on or before the scheduled date and time for each assignment. Late assignments may not be accepted without proper verification of reasons for the late submission.

Proposed Course Schedule, Topics & Resources

Schedule	Topics/Events
pre-course meeting Thurs., May 12, 2011	Orientation to the Course and Course Proceedings
Weeks 01 & 02	Atomic Structure & the Periodic Table
	MEMORIAL DAY HOLIDAY – NO SYNCHRONOUS MEETING on Monday, May 30, 2011
	<i>Test #01 – Tuesday, June 02, 2011</i>
Weeks 02 & 03	Molecular Structure & Bonding Characteristics
Week 04	Types & Analysis of Compounds; Making & Breaking Bonds
	<i>Test #02 – Tuesday, June 14, 2011</i>
Week 05 & 06	States of Matter; Types of Reactions
	<i>Course Final Exam – Thursday, June 30, 2011</i>

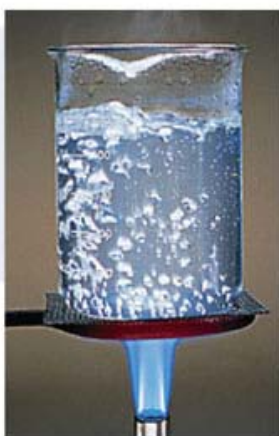
Cooperative Learning Groups in Chemistry

Throughout the semester, you will be asked to work together with your classmates. The instructor will assign you into groups and assign you a role to fulfill while working with that group. The purpose of these assignments is to facilitate the group's progress toward achieving certain goals. Ultimately, this tool is designed to help you as an individual learn the concepts and skills of chemistry. If, at any point, you have a question or concern about this format, please speak with your instructor.

The roles you may have throughout the semester include:

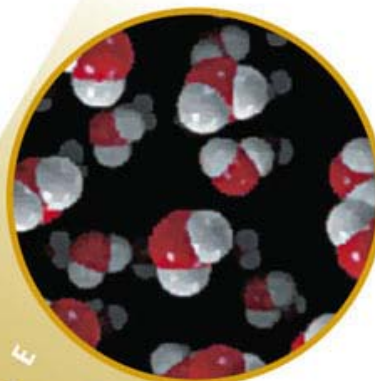
- ❖ *Manager*: The student in this role ensures that the group is functioning efficiently and progressing within the time frame set by the instructor. This student is not a supervisor, but a full participant. Additionally, this student monitors the participation of all group members to make sure all ideas have been heard.
- ❖ *Recorder*: The student in this role transcribes the agreed upon responses of the group to questions and problems. The recorder is not solely responsible for doing the work, but is responsible for accurately recording the results of the group's work. There will be times during the semester when the group's answer(s) to certain questions will be collected. The recorder submits these responses.
- ❖ *Technician*: The student in this role primarily handles calculations and the management of equipment for the group. If special operating instructions are needed for an instrument during an activity, the technician is the point person for these applications and will be trained as necessary.
- ❖ *Presenter*: The student in this role represents the group during all class discussions or during inter-group interactions. Similarly to the recorder, the presenter's responses should accurately reflect the results of the work of the group.

Due to class enrollment or attendance, there may be times when one member may have to fulfill more than one role. Additionally, there will be times when group members will be asked to observe and comment on the group dynamics and behavior with respect to learning.



Macroscopic

O B S E R V E



Particulate

I M A G I N E

R E P R E S E N T



Symbolic

Chemistry 101: General Chemistry A Online Version
Summer 2011
Student Information Sheet

Source	Information
First Name	
Last Name	
Preferred Name	
Email address	
Local Phone Number	
Alternative Phone Number	
Are you pre-med?	
<i>Please list three expectations you have for this course.</i>	
<i>Please list three goals you have for yourself in this course.</i>	
<i>Please list three actions you will take during the semester to reach your goals.</i>	