General Chemistry A, Lecture/Discussion
CHEM 101
Fall 2010
Loyola University Chicago

Instructor:	Patrick L. Daubenmire, Ph. D.
Office:	Flanner Hall (FH) 415/Cudahy Hall (CS) 415
Phone (office):	773.508.8248
Phone (mobile):	630.336.4180
Email:	pdauben@luc.edu
Office hours:	W: 1-4 pm, CS-415; R: 9-11 am, FH-415; others by appointment

Class Meeting Times:	Discussion Sections:	T (008), 8:30-9:45 am, FH-007 T (009), 11:30-12:45 pm, FH-007
	Lecture:	T, R (007): 2:30-3:45 pm, CS-202

Course Description
The purpose of CHEM 101 is to introduce students to fundamental principles of chemistry. Specific areas addressed are: practices of measurement; 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 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.

Required Resources
(1) Kotz, J.C., Treichel, P.M., & Townsend, J.R. (2009) *Chemistry & Chemical Reactivity, 7th ed.* Thompson Brooks/Cole
(2) *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 education[1]. 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/transformativeed/

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 program and the University. For specific policies and procedures see: http://www.luc.edu/education/academics_policies.shtml#honesty. Infractions against this policy may result in a failing grade for the assignment, or even, failure from the course.

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.

Safety
Students must adhere to proper safety protocols and practices when conducting classroom activities and laboratory investigations. A separate agreement describing these practices may nee to be signed before a student may participate in coursework and/or laboratory investigations.

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

Criterion	Maximum Percent Value
Quizzes & Problem Sets	25 %
In-class work	10 %
Tests	35 %
Final Exam	30 %

Quizzes will be administered regularly during the semester. Content from the previous class session will be the source of material on each quiz. The two lowest quiz scores will be dropped from your course evaluation.

Problem Sets will be assigned at three different points in the semester. These sets are take-home problems. While collaboration is encouraged to generate ideas, submitted solutions must ultimately be the result of your own unique effort, work, and analysis.

In-class work will be an important part of our class meetings. This work will be a combination of individual and group work. Students must be present during class 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.

The *Final Exam* will be designed to assess students comprehensive knowledge of concepts developed during the work of the semester.

For a detailed schedule of for these assignments, please see the course schedule on pages 7-8 of this syllabus.

Estimated Grading Scale

Overall Weighted Percentage	Letter Grade
91.50-100	A
89.50-91.49	A-
87.50-89.49	B+
81.50-87.49	B
78.50-81.49	B-
75.50-78.49	C+
70.50-75.49	C
67.50-70.49	C-
64.50-67.49	D+
60.50-64.49	D
0-60.49	F

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 sometimes frustrating, but their development is accompanied by the reward of deepening one's ability to think critically and solve problems in any field. To do this, one need regularly 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 the instructor.

Additionally. the Center for Tutoring & Academic Excellence offers free Small Group tutoring for Loyola students. The groups meet once a week through the end of the semester and are led by a peer tutor who has successfully completed study in the course material. For selected subjects, Tutor-led Study Hall is also available. There is no need to make an appointment for Study Hall hours, simply bring your coursework and there will be tutors on hand to assist you. To learn more or request tutoring services, visit the Center online at www.luc.edu/tutoring.

Norms of Course Proceedings
The classroom is to be a safe place 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 chemistry content and developing thinking skills. This will more often driven by the use of data and reasoning to discover concepts and solutions rather than the identification and exchange of chemical facts and algorithms.

Class sessions will begin and end on time. All students should attend class regularly and participate in class discussions. Multiple absences could affect one's ability to learn chemistry during this semester. 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 assessment for which a student is asking for a make-up.

Students are expected to take tests and exams when scheduled as well as to turn in assignments on the schedule due date and time. 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.

Cell phones and the use of texting devices should be used in an appropriate and professional manner. These devices should not distract participation in the learning environment.

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 three days.

Proposed Course Schedule, Topics & Resources

Day/Date	Topic/Activity	Assignment	Resources
Week 01 (08/31-09/02)	**Basic Concepts and Tools of Chemistry**		**Chapter 1+**
Week 02 (09/07-09/09)	***Quiz in discussion sections*; Atoms, Molecules, and Ions**	**Problem Set #01 options available on Blackboard**	**Chapter 2, Sections 4.1-4.3**
Week 03 (09/14-09/16)	**The Structure of Atoms & Periodic Trends, Part I**		**Chapters 6 & 7**
Week 04 (09/21-09/23)	***Quiz in discussion sections*; The Structure of Atoms & Periodic Trends, Part II**		**Chapters 6 & 7**
Week 05 (09/28-09/30)	**Introduction to the Chemistry of Carbon**	**Turn-in Problem Set #01 09/23 by 3:45 pm**	**Chapter 10**
Week 06 (10/05-10/07)	***Test #01 – 10/05 in lecture section*; Bonding & Molecular Structure, Part I**		**Chapters 8 & 9**
Week 07 (Fall Break, 10/14 class)	**Bonding & Molecular Structure, Part II**		**Chapters 8 & 9**
Week 08 (10/19-10/21)	***Quiz in discussion sections*; Bonding & Molecular Structure, Part III**	**Problem Set #02 options available on Blackboard**	**Chapters 8 & 9**
Week 09 (10/26-10-28)	**Gases, Part I**		**Chapter 11**
Week 10 (11/02-11/04)	***Quiz in discussion sections*; Gases, Part II**		**Chapter 11**
Week 11 (11/09-11/11)	**Intermolecular Forces & Liquids & Solids**		**Chapters 12 & 13**
Week 12 (11/16-11/18)	***Quiz in discussion sections*; Solutions**	**Turn-in Problem Set #02 11/18 by 3:45 pm**	**Chapter 14**

Day/Date	Topic/Activity	Assignment	Resources
Week 13 (11/23 class; Thanksgiving Break)	***Test #02 – 11/23 in lecture section;* Categories of Chemical Reactions**		**Chapter 3**
Week 14 (11/30-12/02)	**Quantitative Information about Chemical Reaction**		**Chapter 4**
Week 15 (12/07-12/09)	***Practice Final in discussion sections*; Energy and Chemical Reactions**	**Problem Set #03 (in discussion sections)**	**Chapter 5**
Week 16 (FINALS!)	**FINAL EXAM – Thursday, Dec. 16, 9-11 a.m., CS-202**		

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:

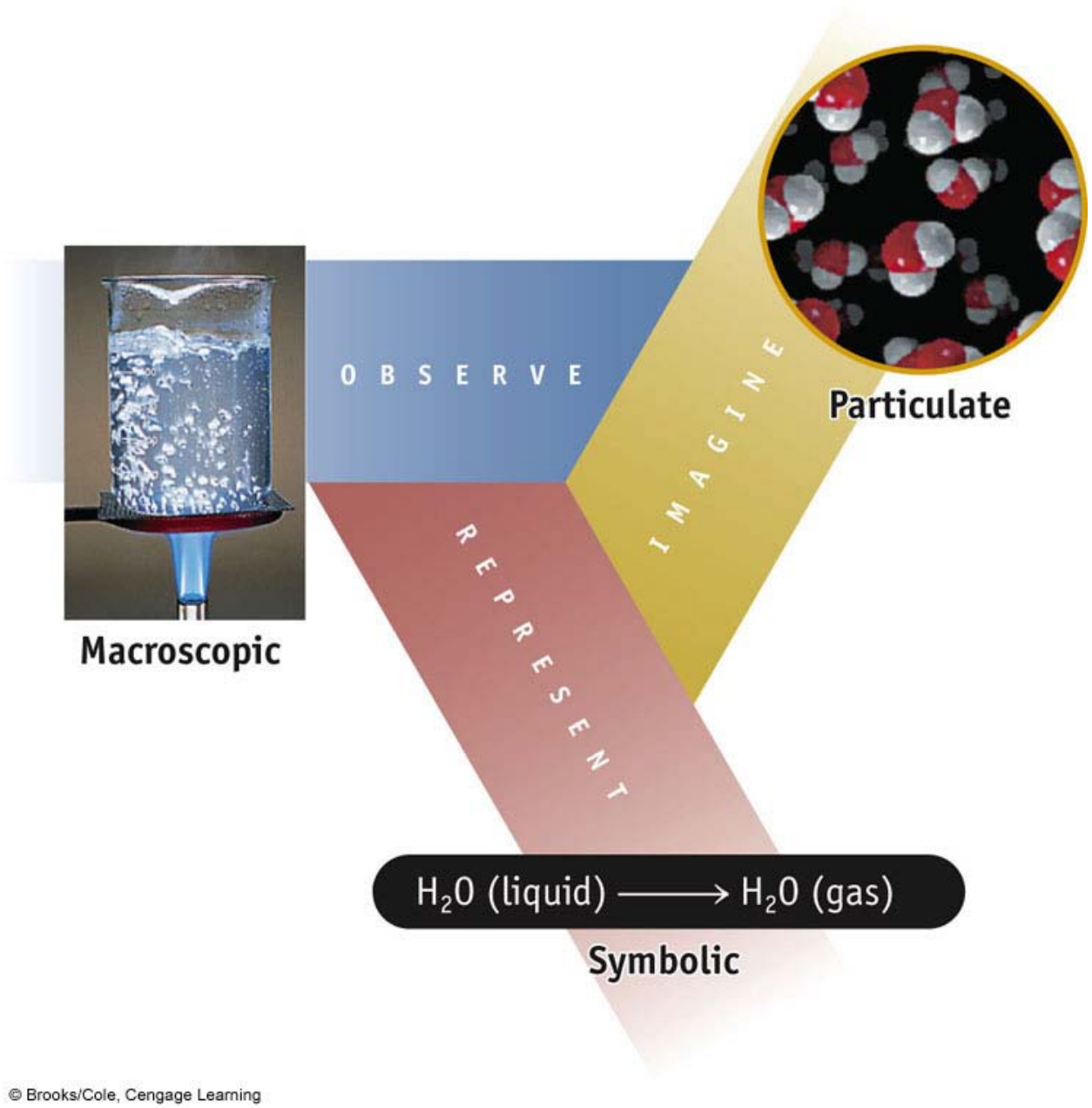
- *Manager*: The student in this role ensures that the group is functioning efficiently and progressing within the time frame set by the instructor. This student is not a supervisor, but a full participant. Additionally, this student monitors the participation of all group members to make sure all ideas 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 absences, 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.



Chemistry 101: General Chemistry A
Summer 2010
Student Information Sheet

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