

CHEMISTRY 4:012 - PRINCIPLES OF CHEMISTRY II - Summer 2008

Professor	Mouna Maalouf
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Office Hrs (or by appt)	M: 10:00-11:50 PM T 3:00-3:50 PM W 3:00-3:50 PM

Course Objectives

Principles of Chemistry II is the second semester of a two-semester sequence (4:11/4:12) that provides students with a broad overview of the Chemical Sciences and their relevance to contemporary society, health, and the economy. Through participation in course activities, each student will improve her/his knowledge of chemistry, develop qualitative/quantitative problem-solving skills and logical approaches, and gain added laboratory experience (Chemistry is first and foremost an *experimental* science) that are relevant to scientific and medical areas/careers, and to an informed citizenry.

Course Structure and Instructors

Chemistry 4:12 has five components with different scheduling. Attendance is necessary at all five components in order to maximize your educational experience. The instructor recommends that students devote ≥ 8 h/week to out-of-class studying (reading book chapters, reviewing class and case study notes) and problem-solving (4 credits x 2 out-of-class h/credit).

- (1) **Lecture** - Prof. Maalouf
- (2) **Discussion Section** - Prof. Maalouf, and a graduate student teaching assistant (TA) Ashish Datt.
- (3) **Case Study** - Prof. Maalouf
- (4) **Laboratory** - Prof. Maalouf & a graduate student TA, Vishal Sharma.
- (5) **Exams** - Prof. Maalouf

TA Office Hours

Discussion and Laboratory Section teaching assistants have scheduled office hours in Room 243 of the Chemistry Building (on west side of building, 2nd floor). This room is normally open 8:30 AM - 4:30 PM, Monday - Friday. TAs for chemistry courses other than Chem 4:12 may also be able to assist you.

Discussion Section

Discussion Sections are limited to ~28 students and are a very helpful, more personal complement to lectures. Students ask questions and obtain problem-solving experience, and TAs review key course concepts. For each week, three points are awarded for participation in discussion activities, up to a maximum of 30 points during the semester. Discussion Sections do meet the first week of classes beginning Wednesday June 11. For discussion section times and room assignments, check your ISIS-schedule.

Case Study / Laboratory

Activities: Activities for credit are conducted during Case Study (CS) and Laboratory periods. A Case Study is paired with each lab experiment and meets Mondays at 8:30AM in W128 CB. Lab sections **DO** meet the first week of classes. For lab meeting times and locations check your ISIS schedule.

Safety: Students must always comply with laboratory safety rules for their personal safety and the safety of other students and instructors. Students must complete lab safety training and pass a quiz **before** they will be allowed to perform experiments. If a student fails to comply with safety rules, the student will be asked to leave the laboratory and their grade will be lowered.

Pregnancy: Many chemicals pose potential hazards to a fetus or young child. Women who are pregnant, nursing, or who expect to become pregnant are strongly advised to consult

with their physician about the hazards of possible exposure to chemicals used in this course. Material safety data sheets (MSDS) and other safety information are available.

Course Content and Prerequisites

Content: properties of solutions, chemical kinetics, nuclear chemistry, aqueous equilibria, chemical thermodynamics, electrochemistry, chemistry of the representative main group and transition metal elements, coordination compounds, organic chemistry, and biological chemistry.

Prerequisite: Chemistry 4:11, Principles of Chemistry I, or its equivalent

Course Materials

Chemistry, fourth edition, by Martin S. Silberberg (required textbook)

WebAssign Access Card (required access)

Lab Notebook (with carbonless copy pages) and laboratory goggles (required)

Case Study / Lab Experiment Manual (available at Zephyr Copies, 124 E Washington St.) (required)

Student Solutions Manual, by Langley & Silberberg (optional)

Course Website

Chemistry 4:12, Iowa Courses Online (ICON) website URL = <http://icon.uiowa.edu/>. Use your HawkID and HawkID password to log in to ICON. This website includes links to the *Chemistry* by Silberberg Companion Website (interactive quizzes, etc.), and the WebAssign (homework) website.

Online Homework

WebAssign is Internet-based software that helps students to improve their problem-solving skills and understanding of concepts. 12% of your grade will be based on your *WebAssign* scores. Each assignment will be worth 12 points, with a score of ≥ 11 being increased to 12 at semester's end. The assignment with the lowest score out of the 11 total assignments will be dropped, so the maximum score is 120 points for 10 assignments. *WebAssign* is described on the Chem 4:12 ICON website.

Course Administration

Please go to the Chemistry Center, Room 231 Chemistry Building, for drop/add signatures, make-up laboratory scheduling, make-up exam scheduling, course handouts, alternate textbooks, section changes, and tutor lists. Hours are Monday-Friday, 8:00 AM-12:00 & 12:30-4:30 PM. The Chemistry Center Manager is Lin Pierce (335-1341 or <lin-pierce@uiowa.edu>).

Special Needs

Students with disabilities requiring modification of seating, testing, or other course arrangements should contact the Office of Student Disability Services (SDS), 3101 Burge, 335-1462, and then go to the Chemistry Center, CB 231 (www.clas.uiowa.edu/faculty/teaching/classroom_p&p/disabilities.shtml)

Complaints

Complaints and appeals regarding this course, its instructor, or its TAs can be filed with the Departmental Executive Officer (DEO) at the Department of Chemistry administrative offices, Room 305 CB (335-1350). Students are encouraged to first meet with the course's professors with their concerns about course aspects, TAs, lectures, or exams.

Grading

Grades will be based on four 1.5-hour unit exams, Case Study/ Lab assignments, homework, and discussion section attendance. Plus & minus grades will be assigned.

4 Unit Exams	= 650 points
Case Study, Lab Experiments	= 200 points
WebAssign homework	= 120 points
<u>Discussion Sections (10 of 15)</u>	<u>= 30 points</u>
Total	= 1000 points

**CLAS Recommended Grade Distribution
for Introductory Courses**

<i>Grade</i>	<i>% of Class</i>
A	15
B	34
C	40
D	8
F	3

Laboratory Component Requirements and Make-Up Information

Successful completion of the Case Study/Laboratory portion is required for a passing grade in 4:12. This means: (i) you must receive at least 50% of the Case Study/Laboratory points, and (ii) you must complete at least four of the six laboratory experiments. If a Laboratory is missed owing to illness, family emergency, or other qualifying excuse, a "Laboratory Make-up Request Form" must be submitted to the Chemistry Center within one week of the absence. Make-up laboratories will be held during scheduled laboratory section times. It may be possible to schedule a make-up CS/lab within a different laboratory section while the same experiment is being covered. A request to attend a different section must be approved by Dr. Maalouf prior to attending a section other than the one for which you are registered.

Examinations

Four 1.5-hour unit exams, all closed book, will include Lecture and Case Study/Laboratory (CS/Lab) questions. The multiple-choice items are graded on the number of correct answers, with no penalty for guessing. Students should bring a #2 pencil with eraser, their University ID, and a basic calculator to each exam. Graphing calculators, programmable calculators, or data transmitting devices (e.g., PDA, laptop, and especially cell phone) will not be allowed in the examination room under any circumstances. Out of fairness to all other students, exams will not be re-scheduled in order to accommodate personal holiday or travel plans.

Exam #1: **June 19** - Place and evening time TBA- Chapters 15, 16, 13; safety, CS/Lab 7

Exam #2: **July 3** - Place and evening time TBA - Chapters 13, 18, 19; CS/Lab 8 and 9

Exam #3: **July 17** - Place and evening time TBA - Chapters 14, 20, 21; CS/Lab 10, 11

Exam #4: **August 1** - Place and time TBA Chap. 22, 23, and 24, and selected chapters; all CS/Lab topics

Make-Up Examinations

If an examination is missed because of illness, family emergency, or other University-sanctioned reason, written documentation must be submitted to the Chemistry Center no later than three business days after the missed exam in order to qualify for a make-up examination. Excused absence forms are required and are available at the Registrar web site: www.registrar.uiowa.edu/forms/absence.pdf

Make-up Exam #1, 2 and 3: Friday, July 25

Academic Conduct and Misconduct

The College of Liberal Arts & Sciences academic misconduct policy is available at: www.clas.uiowa.edu/students/academic_handbook/ix.shtml#1. Academic misconduct may result in grade reduction and/or other serious penalties, up to and including expulsion from the University.

Examinations: You are expected to work alone. Cheating will not be tolerated. The instructors believe strongly in fairness for all students and objective appraisal of individual performance and understanding of course material.

WebAssign (homework): For your ultimate benefit in terms of exam performance, you alone

should complete your WebAssign homework without assistance from other current/former students. TAs are available at convenient times to help you in gaining the needed understanding and problem-solving skills, and faculty have regular and arrangeable office hours in order to help you.

Laboratory: Data collection is a group activity (2 or 4 students). All data must be collected in the lab. Use of data not collected by the author of the report, use of data not acquired during the lab period, and/or use of fabricated data are serious academic misconduct. We encourage you to discuss case study, pre-lab, and laboratory questions in groups, but questions must be answered individually.

College of Liberal Arts and Sciences: Policies and Procedures

Administrative Home of the Course

The administrative home of this course is the College of Liberal Arts and Sciences, which governs academic matters such as add/drop deadlines, second-grade-only option, academic fraud or academic probation, and how credits are applied for graduation requirements. Different colleges might have other policies. If you have questions about CLAS policies, visit your academic advisor or 120 Schaeffer Hall and speak with the staff. The Academic Handbook contains important CLAS academic policy:
www.clas.uiowa.edu/students/academic_handbook/index.shtml

Academic Fraud

Plagiarism and other activities that result in a student presenting work that is not his or her own are academic fraud. Academic fraud is reported to the Chemistry DEO and then to the Associate Dean for Academic Programs and Services in the College of Liberal Arts and Sciences who deals with academic fraud according to these guidelines:
www.clas.uiowa.edu/students/academic_handbook/ix.shtml

Making a Suggestion or a Complaint

Students have the right to make suggestions or complaints and should first visit with an instructor, then with the Chemistry DEO. All complaints must be made within six months of the incident. www.clas.uiowa.edu/students/academic_handbook/ix.shtml#5

Accommodations for Disabilities

A student seeking academic accommodations must first register with Student Disability Services and then meet with a SDS counselor who determines eligibility. A student approved for accommodations should meet with the course instructor to arrange accommodations. See www.uiowa.edu/~sds/

Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit www.sexualharassment.uiowa.edu/ for definitions, assistance, and full policy.

Reacting Safely to Severe Weather

The UI Operations Manual, section 16.14, outlines appropriate responses to a tornado or to a similar crisis. If a tornado or other severe weather is indicated by the UI outdoor warning system, members of the class should seek shelter in rooms and corridors in the innermost part of a building at the lowest level, staying clear of windows, corridors with windows, or large free-standing expanses such as auditoriums and cafeterias. The class will resume, if possible, after the UI outdoor warning system announces that the severe weather threat has ended.

Resources for students:

Writing Center 110 English-Philosophy Building (EPB), 335-0188,

www.uiowa.edu/~writingc

Speaking Center, 12 EPB, 335-0205, www.uiowa.edu/~rhetoric/centers/speaking

Mathematics Tutorial Laboratory 314 MacLean Hall, 335-0810,

www.uiowa.edu/mathlabTutor

Tutor Referral, Campus Info Center, IMU, 335-3055,

www.imu.uiowa.edu/cic/tutor_referral_service

Student Classroom Behavior

The ability to learn is lessened when students engage in inappropriate classroom behavior, distracting others; such behaviors are a violation of the Code of Student Life. When disruptive activity occurs, an instructor has the authority to determine classroom seating patterns and to request that a student exit the classroom, laboratory, or other instructional area immediately for the remainder of the period. One-day suspensions are reported to Departmental, Collegiate, and Student Services personnel (Office of the Vice President for Student Services and Dean of Students).

University Examination Policies

Missed exam policy. University policy requires that students be permitted to make up exams missed because of illness, religious obligations, certain University activities, or unavoidable circumstances.

Final Examinations. A student with two final examinations scheduled for the same period or more than three examinations scheduled for the same day may file a request for a change of schedule before the published deadline at the Registrar's Service Center, 17 Calvin Hall, 8-4:30 M-F, (384-4300).

Tentative Lecture, Case Study, Laboratory & Examination Schedules

Date	Day	Lectures & Exams	CS & Lab	WebAssign	WebAssign Due
June 10	T	Course Overview ; Chapter 15- Organic Compounds	Safety Quiz		
11	W	Chapter 15	Safety Quiz		
12	Th	Chapter 15			
13	F	Chapter 16 – Chemical Kinetics			
16	M	Chapter 16	Case Study 7	Chapter 15	June 16, 11:59 PM
17	T	Chapter 16	Exp. 7		
18	W	Chapter 16	Exp. 7		
19	Th	Chapter 13 - Properties of Mixtures			June 19, 11:59 PM
19	Th	Exam I: Chapters 15, 16; and safety, CS/Lab 7		Chapter 16	
20	F	Chapter 13			
23	M	Chapter 13	Case Study 8		
24	T	Chapter 18 – Acid-Base Equilibria	Exp. 8		
25	W	Chapter 18	Exp. 8		
26	Th	Chapter 19 – Ionic Equilibria		Chapter 13	June 26, 11:59 PM
27	F	Chapter 19			
30	M	Chapter 19	Case Study 9	Chapter 18	June 30, 11:59PM
July 1	T	Chapter 19	Exp. 9		
2	W	Chapter 20 – Thermodynamics	Exp. 9	Chapter 19	July 2, 11:59 PM
3	Th	Chapter 20			
3	Th	Exam II: Chapters 13, 18, 19; and CS/Lab 8 and 9			
4	F	No Classes			
7	M	Chapter 20	Case Study 10		
8	T	Chapter 20	Exp. 10		
9	W	Chapter 21 - Electrochemistry	Exp. 10		
10	Th	Chapter 21		Chapter 20	July 10, 11:59 PM
11	F	Chapter 21			
14	M	Chapter 21	Case Study 11		
15	T	Chapter 14 – Main Group Elements	Exp. 11		
16	W	Chapter 14	Exp. 11	Chapter 21	July 16, 11:59 PM
17	Th	Chapter 14			
17	Th	Exam III: Chapters 20, 21, 14; and CS/Lab 10 and 11			
18	F	Chapter 23- Transition Elements			
21	M	Chapter 23	Case Study 12	Chapter 14	July 21, 11:59 PM
22	T	Chapter 23	Exp. 12		
23	W	Chapter 24 – Nuclear Reactions	Exp. 12		
24	Th	Chapter 24			
25	F	Chapters 24		Chapter 23	July 25, 11:59 PM
28	M	Chapter 22 – Elements of Nature & Industry			
29	T	Chapter 22		Chapter 24	July 29, 11:59 PM
30	W	Chapter 22			
31	Th	Chapter 22			
August 1	F	Exam IV: Chapters 23, 24, 22, and selected chapters and all CS/Labs		Chapter 22	Aug. 1, 11:59 PM