

CHEMISTRY 4:006 – Technology & Society Laboratory – Summer 2008

Professor	Mouna Maalouf
Office	331 Chemistry Bldg
Phone	335-1108
Email	mouna-a-maalouf@uiowa.edu
Office Hrs (or by appt)	M 2:00-2:50 PM T 2:00-2:50 PM

Course Description and Objectives: The Technology and Society Laboratory Course (4:006) consists of twelve experiments that will provide students with the opportunity to develop concepts and apply their knowledge of chemistry. Through participation in course activities, each student should improve her/his knowledge of chemistry and to develop improved problem solving skills. In the laboratory, students will be guided by a teaching assistant, and the course will be administered by the course instructor. Students should expect to devote at least 2 hours per week to out-of-class studying for this course.

Course Prerequisites: You must be currently enrolled in 4:005 (*Technology and Society*) or have previously completed that course. You will be dropped from the course list immediately if that is not the case.

Required Course Materials:

- *Chemistry in Context Laboratory Manual*, American Chemical Society, 5th Ed.

Recommended Course Materials

- *Chemistry in Context: Applying Chemistry to Society*, American Chemical Society, 5th Ed.
- Handheld calculator with exponents, logarithms, square roots, etc.

Course Website: Chemistry 4:006, Iowa Courses Online (ICON) website URL = <http://icon.uiowa.edu/>. Use your HawkID and HawkID password to log in to ICON.

Teaching Assistant: Mark Brewer, Email: mabrewer@engineering.uiowa.edu. The laboratory teaching assistant (TA) will have scheduled office hours in room 243 in the Chemistry Building; the hours will be announced in lab and posted on ICON.

Laboratory Director: Earlene Erbe, Office: W446CB, Phone: 335-1352, Email: earlene-erbe@uiowa.edu.

Course Administration: Go to the Chemistry Center, Room 231 CB, for add/drop signatures, make-up lab forms, course handouts, and alternate textbooks for loan, and other administrative matters. Complaint procedures and policies on cheating can also be obtained there. The Chemistry Center hours are 8am-12:00pm and 12:30pm-4:30pm Monday through Friday. 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 first 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 TA 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 professor with their concerns about course aspects, or TAs.

Laboratory:

Activities: Activities for credit are conducted during Laboratory periods. For lab meeting times and location 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.

Quizzes: At the beginning of each laboratory period, there will be a short quiz to check your preparation for the current experiment and review questions on the previous weeks experiment. **The quizzes start promptly at the beginning of the laboratory period.**

Laboratory Reports: For each of the labs, you must write a laboratory report that is handed in at the beginning of the next laboratory period (due dates shown in schedule on p.3). You are expected to write the report by YOURSELF even though you may have a partner and may combine data with other groups. The laboratory report will consist of several parts as outlined on p. 4 of the syllabus.

Late Laboratory Reports: Laboratory reports are due at the beginning of the next lab period. The specific dates are listed on page 3. Two points per day are deducted for late reports. Turn late reports in to the Chemistry Center as soon as they are completed.

Grading: There are a total of 330 points in the course:

Lab Reports:	11 best reports (out of 12) @ 25 points each	275 points
Quizzes:	11 best quizzes (out of 12) @ 5 points each	55 points

Grading will be done on a curve. Traditionally the Chemistry Department has given the following grade distribution in this course: 15-25% A, 40-50% B, 15-25% C, etc. (plus and minus grades will be assigned and are included in the distribution.) The scale is adjusted up or down depending on overall class performance. You may miss one experiment (and quiz) out of

the 12 without any penalty. If you complete all 12 labs, your grade will be calculated using your 11 best laboratory report scores and 11 best quiz scores. **You must complete at least 10 laboratory experiments to obtain a passing grade in this course.**

Make up Labs: If a Laboratory is missed owing to illness, family emergency, or other qualifying excuse, you should email the instructor, Dr. Maalouf (mouna-a-maalouf@uiowa.edu) as soon as possible. There is a makeup laboratory time in the laboratory schedule that may be used to make up a missed experiment once the appropriate documentation for the excused absence has been submitted to the instructor.

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.

Quizzes: You are expected to work alone. Cheating will not be tolerated.

Laboratory: Data collection is a group activity (typically 2 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 laboratory questions in groups, but when it comes time to put your pen to the paper, questions must be answered individually.

Technology & Society Laboratory Weekly Schedule

Date	Day	Experiment Number	Experiment Name	Reading	Report due
June 10	T	–	Check-in and Safety Quiz	–	–
12	Th	1	Gases in Breath	pp. 1-8	June 17
17	T	9	Chemical Moles	pp. 59-63	June 24
19	Th	11	Energy Content of Fuels	pp. 67-73	June 26
24	T	14	Water Hardness	pp. 91-98	July 1
26	Th	17,18	Rxns of Acids; pH Measurements	pp. 115-129	July 3
July 1	T	29	Vitamin C in Fruit Juice	pp. 203-209	July 8
3	Th	Make-up	(with permission)		–
8	T	Handout	Visual Delight of Quantum Dots	Handout	July 15
10	Th	26	Synthesis of Aspirin	pp. 177-185	July 17
15	T	25	ID of Analgesic Drugs by TLC	pp. 169-175	July 22
17	Th	22	Chemical Reactions and Electricity	pp. 147-153	July 24
22	T	23	Polymer Synthesis and Properties	pp. 155-162	July 29
24	Th	27	Fats in Snack Food	pp. 187-193	July 29
29	T	Make-up	(with permission)		–
31	Th		Check-out*		–

*Failure to check-out will result in a 10 point deduction.

Laboratory Report Guidelines

Each experiment will be worth 25 points. In general, **laboratory reports will be due at the beginning of the next laboratory period (check lab schedule for due dates)**. Each of your laboratory reports should contain the following sections:

The top of your first page you should include: the title of the experiment, your name, your section number, and the date.

Introduction: A brief passage (~ 1-2 paragraphs) providing relevant background information and defining the objective of the laboratory experiment. This section answers the questions: *What are you trying to examine, and why is it interesting?*

Procedure: Usually, the procedure section will simply reference the lab manual. However, if you modified the original procedure during your experiment, the modifications should be described in this section.

Data Sheets: Fill in the data sheets (found in your laboratory manual) with your experimental results, observations and calculations. Be sure to show all of your work for the calculations. No partial credit will be given if you do not show all of your work.

Conclusions: Briefly describe the main conclusions of the experiment. This section should be approximately 1-2 paragraphs long and should provide an interpretation of the results of the experiment. For example, *did you meet the objective of the experiment? Are your results reasonable? How do your results fit in with what have learned so far in 4:5 and 4:6?*

Questions: Complete the assigned “*Questions to be Answered After Completing the Experiment*” found at the end of each experiment. The specific questions to be answered for each lab will be announced by the TA prior to each experiment.

The scoring of each lab will depend on the format of the laboratory investigation undertaken, but a representative breakdown for a “typical” 25-point lab is as follows:

Laboratory Report (25 points)

Introduction	2	points
Procedure	1	point
Data Sheets	8	points
Conclusions	2	points
Questions	8	points
Well written and organized	2	points
Lab Performance (Cleanliness, Safety, etc.)	2	points
Total	25	points

College of Liberal Arts & 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 relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic fraud or academic probation, and how credits are applied for various graduation requirements. Different colleges might have different policies. If you have questions about these or other CLAS policies, visit your academic advisor or 120 Schaeffer Hall and speak with the staff. The CLAS Academic Handbook also contains important CLAS academic policy:

www.clas.uiowa.edu/students/academic_handbook/index.shtml

Academic Fraud: The University expects the highest level of integrity from its students. Plagiarism and any 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 departmental DEO and then to the Associate Dean for Academic Programs and Services 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 the instructor, then with the course supervisor if appropriate, and next with the departmental DEO. All complaints must be made as soon as possible and always within six months of the incident.

www.clas.uiowa.edu/students/academic_handbook/ix.shtml#5

Accommodations for Disabilities: The University upholds actions of diversity and inclusion. A student seeking academic accommodations first must register with Student Disability Services (3100 Burge Hall, 335-1462, www.uiowa.edu/~sds/) and then meet with a counselor in that office who reviews documentation and determines eligibility for services. A student approved for accommodations should then go to the Chemistry Center, Room 231 CB, to arrange particular accommodations.

Understanding Sexual Harassment: Sexual harassment is reprehensible and will not be tolerated by the University. It 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 the full University policy.

Reacting Safely to Severe Weather: The University of Iowa Operations Manual section 16.14 (www.uiowa.edu/%7Eour/opmanual/v/16.htm#1614) 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 (www.uiowa.edu/~pubsfty/siren.htm).

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, a University instructor has the authority to determine classroom seating patterns and to request that a student exit immediately for the remainder of the period. One-day suspensions are reported to appropriate departmental, collegiate, and Student Services personnel (Office of the Vice President for Student Services and Dean of Students). www.uiowa.edu/~vpss/policies/ii/a.shtml