

Chemistry 105: General, Organic and Biochemistry Course information and Syllabus, Fall 2008

Faculty Contact Information

When you have questions or problems with assignments, questions about your grades or other things to discuss, please come see me during my office hours which are listed below. If these times don't work for you, email me and we will make other arrangements. I am here to help you get the most out of this course.

Matthew A. Johnston, Ph.D.

Phone: 792-2295

Office hours: MF 10:30 - 11:30, W 3:30 – 5:00 (MLH 130) and by appointment

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Introduction

Welcome to Chemistry 105, an introduction to general, organic and biochemistry. This semester, we will explore the molecules that are involved in the body's function, health and disease. Because the majority of students in this class are intending to pursue a career in the health field, we will focus on applications of chemistry to human health, nutrition and medicine.

Prerequisites

No prior chemistry is required. However, you should have passed Math 025 (basic algebra), or its equivalent. While we will review the relevant concepts that you learned in that course, it is assumed that you have seen the material before.

Course goals

At the end of this course students should be able to do the following:

- (1) Visualize how molecules interact with one another.
- (2) Connect issues in human health, nutrition and medicine with molecular structure and interactions.
- (3) Recognize the relevance of chemistry in your future profession.
- (4) Gain confidence and ability in problem solving and critical thinking.

E-mail contact

Your LCMail e-mail account is the official method of communication between the college and yourself and so you should check your account daily. If you have trouble accessing your account, make sure you work out the problems by calling or stopping by the computer help desk (located at SGC B102 or phone 792-2231).

Class materials

Class materials will be available to you on Blackboard (bbce.lcsc.edu). Please ensure that you can access your account and the class page.

Evaluation

Your grade will be calculated based upon 1 personal statement/photo, 12 cards, 5 quizzes, 4 examinations, 12 laboratories and online homework, as outlined in the following table. More details about these assignments, as well as the grading scale, are below.

Your quizzes and tests will be returned to you in class. If you do not pick them up during class, please stop by my office to retrieve them.

ASSIGNMENT	POSSIBLE POINTS PER ASSIGNMENT	NUMBER OF ASSIGNMENTS	TOTAL POSSIBLE POINTS
PERSONAL STATEMENT/PHOTO	10	1	10
CARDS	5	12	60
QUIZZES	20	5	100
EXAMINATIONS	400	4	400
LABORATORIES	12	15	180
ONLINE HOMEWORK	variable	weekly	150
		TOTAL	900

Personal statement/photo

This is a large class. To facilitate getting to know who you are, I will ask you to fill out a card about your goals and also provide a photo of yourself. The photo can be any old snapshot, but make sure you are recognizable. If there are several people in the photo, please circle yourself.

Cards

Every so often in class, I will ask you to work a problem or describe a concept on an index card. I will collect the cards and mark down that you handed them in as a way of keeping attendance and also make sure that the class is keeping up with the lecture material. You will be given approximately one opportunity a week to hand in a card at 5 points each and you can earn up to 60 points from the cards.

I will not hand these cards back to you. Instead, I will hold on to the cards for the semester.

You are always welcome to look through my stacks of cards if you are unsure whether or not you handed one in (but it would be a big job so best to avoid it if possible).

Quizzes

Quizzes will be every other Friday. They will be composed of multiple choice questions, similar to those questions that you will find on the tests. Each will take about 15 minutes and contain 11 questions. While you will have six opportunities to take quizzes, only the top five of your scores will be counted.

Examinations

These will be on Fridays as scheduled. They will be composed of multiple choice questions. Tests are scheduled for an entire class period. All four examinations will count toward your final grade.

Laboratories

The goals of the laboratory part of this class are:

- (1) To problem solve using concepts introduced in lab and lecture class
- (2) To improve math skills.
- (3) To provide hands-on experience with in-class material.
- (4) To connect in-class material to practical application.
- (5) To meet your classmates and have fun.

The once a week, three hour laboratory time is reserved for covering parts of the text that are math and measuring oriented, as well as carrying out experiments to compliment in-class material. In other words, ***new material will often be presented during the laboratory period, you will have problems assigned covering lab material and you will be tested on it.***

You are expected to attend lab. Handouts for each lab will be available on Blackboard. Your top fifteen scores out of the offered labs will be counted.

Lab exercises may be carried out alone, with a partner or group as directed by the laboratory instructor. Safety is of utmost importance in our lab. You must wear long pants and closed-toed shoes to lab, and wear safety glasses (available at the bookstore). We will have a complete safety orientation during lab.

Homework and online homework

Odd numbered problems from your text will be assigned weekly. While the answers to these problems are in your text, remember that is more helpful to think through the problems for a bit yourself before consulting the answers. It is up to you to complete your homework by the assigned date and to seek help when you need it. Help on your homework is available from your faculty, peers and the math and science tutoring center located on the first floor of MLH. There is no way to learn the material in this course without practicing.

Online homework is available at www.webassign.com which is also available as a link off Blackboard. Doing the online homework has several benefits. First, the homework has a definite, monitored due date, so you have incentive to finish it in a timely manner. Second, you will receive immediate feedback on how you did on your homework (and you can ask me questions through the program if a problem is giving you trouble). Finally, this is an opportunity to practice the type of questions that you will find on tests and quizzes. Your login is your usual LCSC login (usually your first two initials and your last name), institution is "lcsc" and your initial password is the same as your login; you can change this once you log in.

Grading Scale

93-100%	A	83-86%	B	73-76%	C	60-66%	D
90-92%	A-	80-82%	B-	70-72%	C-	<60%	F
87-89%	B+	77-79%	C+	67-69%	D+		

Getting help

It is important to stay caught up in this course. If you get stuck on a subject or problem, do not hesitate to get help. One excellent resource is your classmates. Sometimes talking through problems can help clarify topics and teaching others is an effective way to learn. The Math and Science Tutoring Center is another vital resource. It is located on the first floor of MLH, down the hallway next to the stairs. There, students who have taken this or similar classes are available to help. I am here to help you; my office hours are on the front page of this syllabus.

Disability Statement

If you have any special needs such as a documented learning disability or other situation that limits your access or ability to participate in class or lab, please discuss the situation with me as soon as possible so we can make appropriate arrangements. Assistance with accommodations can also be found at the Office of Student Life, room 111 Reid Centennial Hall.

Special arrangements (such as incompletes, drops and making up quizzes, exams and labs)

Because one quiz grade will be dropped, there will not be quiz make-ups. If you must miss an exam, discuss your situation with me *before* the exam to make alternate arrangements. It may not be possible to arrange an exam time if you do not notify me before the exam. No student will be allowed to make-up more than one exam. No cards will be accepted outside of class.

There will be no incompletes awarded for students with less than an 80% average at the time of the incomplete. Last day for dropping the course without a 'W' on your transcript is September 5. The last day to withdraw from class or college for the semester is October 31, 2008.

Academic Dishonesty

Any form of academic dishonesty, including but not limited to, taking credit for someone else's work, plagiarism, use of forbidden resources, writing papers as a "team" on a individual assignment, taking material from primary sources or internet without referencing properly, etc, will result in a failing grade for this course.

Text and other supplies

- General, Organic and Biochemistry: An Integrated Approach by Raymond 2nd edition; ISBN: 0470-12927-2
- Safety glasses (to be discussed in lab)

Tentative Schedule

WEEK #	RAYMOND	LABORATORY
1. 8/25	Introduction Chapter 1.1 and 1.2 Chapter 2.1-2.5: Atoms and elements Friday Quiz 1	Lab 1 Chapter 1.3-1.5: Science and Measurements
2. 9/1	<i>No class Monday, 9/1</i> Chapter 2.6-2.7: Radioactive isotopes Chapter 3: Compounds	Lab 2 Chapter 1.6: Dosage Measurement
3. 9/8	Chapter 4: An introduction to organic compounds Friday Quiz 2	Lab 3 Shapes of Molecules
4. 9/15	Chapter 4: An introduction to organic compounds Chapter 5: Gases, liquids and solids Friday Exam 1	Lab 4 Slime Exam Review
5. 9/22	Chapter 6: Reactions	Lab 5 5.3 and 5.4: Gas Laws
6. 9/29	Chapter 7.1, 7.4 – 7.9 Solutions, colloids and suspensions Friday Quiz 3	Lab 6 Nutty Cal
7. 10/6	Chapter 8: Lipids and membranes	Lab 7 Solubility
8. 10/13	Chapter 9: Acids, bases and equilibrium Friday Exam 2	Lab 8 Chapter 9.5-9.7: Exam Review
9. 10/20	Chapter 10: Carboxylic acids, phenols and amides	Lab 9 Acids, Bases and Equilibrium
10. 10/27	Chapter 11: Alcohols, ethers, aldehydes and ketones Friday Quiz 4	Lab 10 Buffers
11. 10/20	Chapter 12: Carbohydrates	Lab 11 Carbohydrates
12. 11/3	Chapter 12: Carbohydrates Friday Exam 3	Lab 12 Exam Review
13. 11/10	Chapter 13: Peptides, proteins and Enzymes Friday Quiz 5	Lab 13 Catalase Activity
14. 11/17	Chapter 13: Peptides, proteins and Enzymes	Lab 14 Protein Inhibition
15. 11/24	Chapter 14: Nucleic acids Friday Quiz 6	Lab 15 Antioxidants and DNA
16. 11/24	Thanksgiving Week; no classes	No lab meeting
17. 12/1	Chapter 15: Metabolism	Lab 16 Exam Review

18. 12/8	Topics TBA	
19. 12/15	Exam 4: Wednesday, December 17 th 9 AM to 11 AM; MLH 100	

Grade worksheet for Chemistry 105

In-class cards – Please fill in the date and subject of the card as you do them.

DATE	CARD SUBJECT	DATE	CARD SUBJECT

Personal statement/photo (10 points) – Check here if you have turned this in _____

Quizzes– Please fill in the date, and your quiz scores. Note that only the top five quiz scores will be counted.

DATE	QUIZ SCORE

Exams- Please fill in the date and your test scores.

DATE	EXAM SCORE

Online Homework – please fill in your online homework score at the end of the semester (this information is available at the Webassign website):

I earned (A) _____ points out of a possible (B) _____ points, so my homework score is $(A)/(B) \times 100\% =$ _____

Laboratories – Please fill in the date, title and score of each laboratory.

DATE	LABORATORY TITLE	DATE	LABORATORY TITLE

Now, to add your scores up:

ASSIGNMENT	POINTS
Number of cards you handed in X 5 (60 points maximum)	
10 points for your personal statement and photo	
Your top five quiz scores added together	
Your exam scores added together	
Your top fifteen laboratory scores added together	
Your webassign score	
TOTAL (add your points together and enter here)	
Divide your TOTAL by 900 and then multiply by 100%	