Chemistry in Society, Chem 1400 Fall 2015

Lecture (LSC 168): TTh 10:50am–12:05pm Lab (Lan-Man 206): CRN19420 Th 2:40–4:30pm or CRN19569 F 8–9:50am

Instructor

Dr. Patrick Desrochers
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Web Page: can be access at UCA, chemistry, faculty
http://faculty.uca.edu/patrickd/chem1400/main1400.htm
username = chem1400 password =

Office hours

Drop in times: M 3-4; Tu 9-10; W 10-11 & 3-4
Use this time. It works best if you come prepared to my office with specific questions about lecture, lab, or homework. Other times available by appointment.

Text

Chemistry in Context (8th Ed.): ISBN 978-0-07-352297-5 McGraw-Hill (c) 2015.
Middlecamp, Mury, Anderson, Bentley, Cann, Ellis, Purvis-Robers

Grading

category	possible points	your percent in the category		your points in the category
graded assignments	5		**Use your pct to determine your points in each category.**	
quizzes	15			
experiments/lab work	20			
exams	40			
final exam (11am, Dec 10)	20			
TOTAL POSSIBLE	100		YOUR TOTAL =	

The lowest experiment, quiz, and hour exam will be dropped. Final exams may not be dropped.
Grades: A 89 - 100 points B 79-88 C 69-78 D 57-68 F < 57
Consult my Chem 1400 webpage for examples of grade calculations.

UCA adheres to the requirements of the Americans with Disabilities Act. A student with a documented disability (e.g., physical, learning psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must at the beginning of the semester contact the instructor and UCA Office of Disability Services at 450-3135.

Course Description

The course introduces fundamental chemical principles in the context of current environmental, societal, political, and economic issues. Some of these issues include atmospheric chemistry, ozone depletion, global warming, acid rain, water chemistry, energy resources, and nuclear chemistry. Chemical principles are presented on a "need-to-know" basis; what chemistry is needed to understand a particular issue. This course partially satisfies the core science requirement. See http://uca.edu/core/. As part of this, a core assessment will conducted during the semester.

Course Objectives

Understand basic chemical principles including classifications of the different forms of matter, chemical reactions, varied forms of energy and its interaction with matter, scientific measurements, and careful evaluation of scientific results. Apply these principles to current topical issues and become a more scientifically literate member of a technologically advancing society. Develop information gathering and critical thinking skills allowing for informed and reasoned evaluation of scientific issues.

Graded Assignments

Assignments to be graded will be given periodically. These might involve a web assignment, a consumer product search, or a short calculation. Some of these will be short writing assignments (150-250 word maximum). Many of you are in majors where writing is an essential skill to earn that degree. Show me this skill; show me your best.

Homework

As with any new skill, you learn best by doing. Specific homework problems representative of the material discussed in lecture and the text are listed on the Lecture Schedule. Work these problems on a regular basis as they are assigned each day. You must regularly work and *understand* these problems to do well on quizzes and exams.

Policies

1. Attendance
People who miss classes typically do poorly in this course. Do not be one of these people. Three unexcused absences will result in a WF grade. It is the student's responsibility to obtain information covered during an absence.
2. Academic misconduct
No communication devices may be used during exams or quizzes. Evidence of cheating carries a penalty ranging from a zero on the assignment to complete dismissal from the course with a failing grade. Don't do it.
3. Makeups, late work
Makeup labs, quizzes, or exams will not be offered. A missed lab, quiz, or exam will be dropped as your lowest score. A penalty of 30% per day will be deducted from late graded assignments.

Lab Manual

Chemistry in Context, Laboratory Manual (8th Ed.) J. A. Tripp, L McKenzie (ed.) McGraw Hill 2015. ISBN 978-0-07-351812-3
DO NOT leave the bookstore until you are certain the lab manual you bought coincides with the planned experiments numbered on the lecture/lab schedule.

I have typed and posted on my website the data pages that must be printed and brought with you to class. These are the pages that will be handed in each day. These pages do not contain the procedures that will be followed. These must be read in the published lab manual.

Data pages

These are Adobe files and should be downloaded from the course webpage before coming to lab.

Prelab preparation

Each experiment above has a corresponding pre-laboratory assignment that must be completed prior to coming to lab that day. These prelab assignments are posted on my Chem1400 webpage. These can be completed after you have carefully read the experiment in the published lab manual or the assigned lecture text sections. **Prelab assignments are due at lecture (10:50 am Th) before the assigned lab period. These may also be submitted to me via email before 10:50 on Thu's. A portion of the points for each experiment (5 of a total 35) are allotted to these prelab assignments. Late prelabs will be penalized with point deductions.**

Lab Participation

Chemistry is an experimental science. Lab time is your chance to master some of the experimental aspects of the subject. You will work with a partner in lab, but you will still actively participate in the experiments. Passive observation in lab while a partner does all the work is unacceptable. You will randomly rotate laboratory partners each week.

Lab Deadlines

Labs are typically due at the end of the two hour lab period, unless other instructions are given. Your efficiency in lab will be related in part to your preparedness for that day's work. Read the lab at least a day in advance of the lab. Contact me early with questions regarding concepts or recommended text background material.

Safety Goggles

You must use appropriate safety goggles when working in lab. Your goggles should meet the ANSI Z.87 standard for laboratory eye protection. Specifically, they must have side and top shields to protect your eyes from chemical spills. Examples of eyewear are posted on my 1450 webpage.

The UCA Student American Chemical Society group often has acceptable goggles for sale.

Building Emergency Plan

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at http://uca.edu/mysafety/bep/. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Title IX disclosure

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs, and the obligation to conduct an investigation will depend on the specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: https://uca.edu/titleix.

Lecture, Exam, Laboratory Schedule

Date	Assigned reading on boardlist	End of chapter questions to be worked.*	Lab activity
Aug 20	Ch 1: The Air We Breath	1, 3-21, 23-25,27-33, 35-38,40-42,46-48,52,53,56	8/20,21 Breath Room Volume
25, Tu 27, Th			8/27,28 #1 Gases in Air
Sep 1, Tu 3, Th	Ch 2: Protecting the Ozone Layer	1,3-12,14-23,25,26,28,29,31,37-39,41-45,48, 50,51,54	9/3,4 #8 Bonds and Shape
8, Tu 10, Th			9/10,11 Study session for first exam
15, Tu	**FIRST EXAM (Ch. 1 and 2)**		
17, Th	Ch 3: Chem. & Climate Change	2-5, 7-14,17-25,27,28,31-33,35,36,38,39,41-48,	9/17,18 #6 Color and Light
22, Tu 24, Th		52-54	9/24,25 #10 Moles & Reactions
29, Tu Oct 1, Th	Ch4: Energy from Combustion	1-3,5-10,14,16-18,21,23,32,34a,b,35,39-41,44, 46,48,50,56,59,63,67	10/1,2 #12 Energy and Fuels
6, Tu 8, Th	**SECOND EXAM (Ch. 3 and 4)**		10/8,9 #13 Biodiesel
13, Tu 15,Th	Ch 5: Water for Life	1-10,13,15-27,29,32,33,35-42,44,47,49,51,52	10/15,16 #22 Solubility
20, Tu			
22,Th	Fall Break		No labs this week
27, Tu 29, Th	Ch 6: Acid Rain/Ocean Acidity	1-20,22,23,28,29,31-36,39,42-44,46,50,51,55	10/29,30 #20 Acidic & Basic
3, Tu 5, Th	**THIRD EXAM (Ch. 5 and 6)**		11/5,6 #30 Fat in Chips
10, Tu 12, Th	Ch 7: Fires of Nuclear Fusion	1-18,20-23,25-28,30,31,33-36,39,41,43,45,46, 51,53	11/12,13 Nuclear Worksheet
17, Tu	**FOURTH EXAM (Ch. 4 and 7)**		
19, Th	Ch 8: Energy/Electron Transfer	1-3,5-8,10-16,18-20,25-29,31,34,37-39,42,	11/19,20 #24 Electrochemistry
24, Tu		46,49,52	
26,27	Thanksgiving Break		
Dec 1, Tu 3, Th			No lab this week, study sessions
Dec10 Th	**COMPREHENSIVE FINAL EXAM 11:00 am – 1:00 PM**		

* Answers to blue-colored questions are in Appendix 5 of the text.
Answers to other assigned questions are posted as a link on my Chem 1400 webpage.

Make a habit of working the assigned questions from each day's class; these can form the basis of questions for office time in advance of quizzes and exams. Good habits established early make a significant impact on your performance in this course.