CHEMISTRY 108
SUMMER 2017

Lecturer:	**Dr. Paul Hooker**
Office:	**1110**
E-mail:	phooker@wisc.edu
Office Hours:	By Appointment
Lectures:	M/W/F 8:55-10:10 am, Room B371
Discussion:	M/W/F 10:20-11:35 am
Labs:	Tu and Th: 8:55-10:55 am Room 1341
Course Website on Learn@UW:	https://learnuw.wisc.edu/
General Chemistry Homepage:	http://genchem.chem.wisc.edu/
General Chemistry Office:	Room 1328 Chemistry 263-2424
Important Dates:	Deadline for 100% Refund: Final Drop Date:

INTRODUCTION

Chemistry 108 is a one-semester introductory course that includes selected topics in inorganic and organic chemistry. Emphasis is on relevance to biological, environmental and social issues. Chemistry 108 is not intended for students who expect to take additional chemistry courses and it does not satisfy any prerequisites for further chemistry courses.

COURSE PHILOSOPHY

Unlike more traditional chemistry courses where the chemistry content is the central theme, in CHEM 108 the chemistry concepts will be introduced on a need-to-know basis as various contemporary topics and themes are explored. As well as gaining understanding about basic chemistry principles, students are also expected to apply their chemical knowledge to complex issues.

Upon completion of this course you will have acquired a foundation of knowledge in basic chemistry principles. Although there are plenty of resources to help you achieve this goal your grade will be determined by your ability to demonstrate your comprehension and knowledge by completing quality lab reports, assignments, and performance in tests and quizzes. Your grade is not determined by my perception or your perception of the time and effort you put into the class. Investing the necessary time and effort is an expectation.

REQUIRED MATERIALS

1. Textbook

Title: Chemistry in Context: Applying Chemistry to Society, 8th Edition, 2015.

Authors: Middlecamp, Mury, Anderson, Bentley, Cann, Ellis, Purvis-Roberts
Publisher: American Chemical Society and McGraw Hill

ISBN 978-0-07-352297-5

2. Chemistry 108 Laboratory Manual. The manual can be purchased (cash only) from outside the lecture hall during the first weeks of class.

3. Indirectly vented industrial quality eye protection is required in all chemistry laboratories. These, and ones that fit over regular glasses, can be purchased from the University Bookstore.

4. Tophat Access. **Course Code 772274**

5. An electronic calculator – either an inexpensive scientific or graphing calculator. Cell phone calculators are not allowed to be used in the laboratory or on tests.

6. Note packet (free!) available through the D2L course website.

COURSE INFORMATION

Course Organization

There are three components of CHEM 108; Pre Class Activities, Lecture/Discussion and Lab.

Pre Class Activities

This class will utilize a partially flipped approach in that students will be expected to complete pre class activities where they will be introduced to new concepts by actively watching recordings of class content. There will also be articles and videos to watch will be discussed in the Lecture/Discussion portion of the class. Completion of pre class activities is essential.

Lecture and Discussion

Because this is a summer course with a relatively low enrollment the class structure is different from a standard fall or spring semester. The lecture and discussion sections are designed not just for students to get information, but will provide ample opportunity to practice new concepts introduced in pre class activities. Students will complete "work packets" as part of graded assignments, under the guidance of the instructor and TA.

Laboratory

To pass this class you cannot miss more than two laboratory exercises.

The laboratory experiments are a vital part of this course; you will develop skills that are not easily learned or demonstrated in lectures. These skills include:

- Designing experiments and interpreting data
- Using laboratory equipment properly
- Working with your fellow students in the laboratory
- Communicating your ideas about the data through discussions and writing

Your laboratory report is almost always due at the end of the laboratory period. Late laboratory reports are not graded. The lab schedule is printed on the attached calendar.

Please note that sandals are not acceptable footwear in the laboratory. Contact lenses should **not** be worn in the laboratory because fumes or splashes may be caught between them and your eye. Further attire requirements are described in your laboratory manual and by your TA.

There is no opportunity to make up a laboratory that you miss; a grade of zero will be recorded for unexcused absences. If you have an excuse for missing lab, notify your TA as soon as possible, preferably before the lab period.

Health or Disability Concerns. If you have special needs, please make an appointment to speak to your lecturer and TA at your earliest convenience.

PROBLEM SETS AND HOMEWORK

Problem solving is a crucial aspect of this course and work sheets will be provided linked to each unit of study which will be collected and graded. Your textbook is an excellent source of additional practice problems, and answers to selected problems are given at the back of the book.

EXAMS AND QUIZZES

Quizzes. Quizzes will be given during discussion sections to help you evaluate your progress and to encourage you to memorize essential information.

Exams. There will be two in-class exams and one two-hour comprehensive final exam. **Makeup exams will be only be arranged under extenuating circumstances given and prior permission, where possible, obtained.** Exams may include questions based on the laboratory material. **Please be alert to these exam dates.** You must report any religious conflicts with exams or laboratory exercises to your teaching assistant within the first two weeks of classes.

Exam Dates:	**Friday, July 7**	8:55 – 11:35 am
	Wednesday, August 2	8:55 – 11:35 am
	Final, Friday August 11	8:55 – 11:35 am

GRADES

Grade Distribution

Below is the letter grade distribution for this class

A	93.0%
AB	88.0%
B	83.0%
BC	78.0%
C	70.0%
D	60.0%
F	<60.0%

This distribution will never be distributed up, i.e., a student achieving 93.0% or greater will receive an A grade, however, it may be distributed down (curved) depending on the final class grade distribution.

Grading Criteria

Two 120-minute exams	15% each
Assignments	20%
Laboratory	20%
Quizzes	10%
Final Exam	20%
Total	**100%**

Your scores will be available through Learn@UW

ADDITIONAL RESOURCES

Numerous resources are available to assist you with either this course in particular or college life in general. It is up to you to take advantage of these resources to ensure your success both in this course and at UW-Madison.

Course Web-site on Learn@UW (https://learnuw.wisc.edu/)**:** Our course website can be accessed via Learn@UW. The syllabus, schedules, office hours, TA lecture notes, course handouts, announcements and grades will all be available on Learn@UW.

Study Groups: You may collaborate with other students on homework assignments and laboratory discussion questions. Study groups reflect the teamwork inherent in the way modern science is done; scientists frequently collaborate with others, either within the same department or at a distance with persons in other cities, states or countries. It is important to realize that although you may collaborate with other students on assignments, the work you submit must be your own.

Tutoring Services: A number of tutoring resources are available on campus, some free and some for a fee. For more information, see our Learn@UW site or the General Chemistry home page (http://genchem.chem.wisc.edu/) under the "More for Students" section.

Students with Disabilities: Appropriate accommodations for lecture, laboratory, discussion, and/or exams can be arranged for students with disabilities. The McBurney Disability Resource Center (http://www.mcburney.wisc.edu/) can provide assistance. Accommodations still must be made well in advance, so please pursue these avenues immediately.

Advising and Counseling Services (University Health Services): College life can be stressful. If you are struggling with your academic course load or other academic issues, your advisor is a good resource. If you are struggling emotionally with anxiety, depression, or other health issues, individual counseling is available at University Counseling and Consultation Services. For more information go their website (http://www.uhs.wisc.edu/home.jsp?cat_id=36) or call 265-5600. Crisis intervention services are also available 24 hours a day by dialing this same phone number and pressing option 9.

Academic Misconduct: It is expected that all students will conduct themselves with honesty, integrity, and professionalism. Any student caught cheating on an exam will receive an F in the course. Any student caught cheating on homework, a quiz, or lab (for instance, copying another person's work or fabricating data) will receive a zero for that assignment. A second infraction will result in an F for the course. More information on what constitutes academic misconduct and policies on handling misconduct can be found in your chemistry lab manual and at the following website: http://www.wisc.edu/students/saja/misconduct/UWS14.html

COURSE OUTLINE AND CALENDAR

Dates for lecture topics are **approximate**. The exam dates are **fixed**. The course website on Learn@UW will have details of the specific recordings to watch and assignment due dates.

Week	Class		Lab
1 M W F	Class 1 6/19 Class 2 6/21 Class 3 6/23	Unit 1 Unit 1 Units 2	Lab 1: 6/20 Lab Check In Lab 2: 6/22 P and C Changes
2 M W F	Class 4 6/26 Class 5 6/28 Class 6 6/30	Unit 2 Unit 2 and 3 Unit 3	Lab 3: 6/27 Gases in Air Lab 4: 6/29 No Lab Scheduled
3 M W F	Class 7 7/3 Class 8 7/5 Class 9 7/7	Unit 3 Unit 4 **Exam 1**	Lab 5: 7/4 No Lab Scheduled Lab 6 : 7/6 Refrigerant Gases
4 M W F	Class 10 7/10 Class 11 7/12 Class 12 7/14	Unit 4 Unit 5 Unit 5	Lab 7: 7/11 Molecular Models Lab 8: 7/13 Chemical Moles: Converting Baking Soda to Table Salt
5 M W F	Class 13 7/17 Class 14 7/19 Class 15 7/21	Unit 6 Unit 6 Unit 6	Lab 9: 7/18 pH of Rain and Other Substances Lab 10: 7/20 Energy Content and Fuels Part I
6 M W F	Class 16 7/24 Class 17 7/26 Class 18 7/28	Unit 7 Unit 7 Unit 8	Lab 11: 7/25 Energy Content and Fuels Part II Lab 12: 7/27 Biodiesel
7 M W	Class 19 7/31 Class 20 8/2	Unit 8 **Exam 2**	Lab 13: 8/1 Light Lab 14: 8/3

F	Class 21 8/4		
8 M	Class 22 8/7	Unit 9	Lab 15: 8/1 Plastics and Polymers
W	Class 23 8/9	Unit 9	Lab 16: No Lab Scheduled.
F	Class 24 8/11	**Final Exam**	

COURSE TOPICS

Unit	Chapter	Chemistry Concepts
Unit 1: Atoms, Ions, and Isotopes	Various	Atomic Structure of the Nucleus Daltons Atomic Theory Ionic Compounds
Unit 2: The Air we Breathe	1	Classification of Matter Elements, Atoms, and Molecules Naming Molecular Compounds Alkanes Writing Balanced Chemical Equations
Unit 3: The Ozone Layer	2	Lewis Structures of Molecules Electromagnetic Radiation
Unit 4: Water and Solutions	5	Water H-Bonding, Moles Aqueous Solutions (Electrolytes)
Unit 5 Acid Rain and Ocean Acidification	6	Acid/Base
Unit 6: Energy from Combustion	4	Thermochemistry
Unit 7: Greenhouse Gases and Global Warming	3	Infrared Spectroscopy Moles
Unit 8: Plastics and Polymers	9	Organic Compounds Polymers
Unit 9: Nutrition and Food	11	Biochemistry