

Chem 910 – Chemistry for the Health Related Professions – Spring 2018

Monday/Wednesday/Friday

10–10:50 AM

150 Chevron Science Center

Kimberly Kowallis
kas279@pitt.edu

Office Hours: Tuesdays, 2-3:00 pm in the Chevron 2nd floor tutoring area, or by appointment

For general questions about registration and other chemistry-related topics, visit the Undergraduate Chemistry Office in Chevron 107, or call 412-624-7158.

COURSE MATERIALS

Required

- *Chemistry: An Introduction to General, Organic, and Biological Chemistry, 13th ed.*, Karen C. Timberlake (Pearson, 2018)
- *Chemistry for the Health Related Professions: A Laboratory Experience, 8th ed.*, George C. Bandik & Chad M. Shade (2008)
- Goggles. The type in the University Store meets our strict safety standards.
- Poll Everywhere access. Use of this website and/or app is free and instructions will be provided.

Additional items (not required)

- *Study Guide and Selected Solutions Manual for Chemistry: An Introduction to General, Organic, and Biological Chemistry, 13th ed.*, Karen C. Timberlake & Mark Quirie.
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GRADING

Your grade in this course will be based on your performance in lecture, lab lecture, and lab.

Lecture	(75%)
Weekly Quizzes (Lab Lecture).....	10%
Homework	10%
In-Class Activities	5%
Exam I	15%
Exam II	15%
Exam III.....	20%
Lab	(25%)
Weekly Lab Reports	20%
Technique and Personal Evaluation.....	5%

Mid-terms will be in class on **February 19th** and **March 30th**. Changes to this schedule will be announced at least one week in advance.

The Final Exam will be Thursday, April 26th from 8:00 to 9:50 AM.

Homework will consist of practice problems from the text book and will be due one week after it is assigned. Due dates will be provided with the assignment. You should show all work for full credit.

LEARNING OBJECTIVES

In this course you will learn the foundations of chemistry that contribute to human health, environment, and how chemistry is used in the healthcare professions. Some of these topics include:

- Describing the physical and chemical properties of an element, compound, or mixture and relating these properties to its function and use
 - Utilizing quantitative measurement techniques and evaluating the use of different techniques in different applications
 - Calculating amounts, concentrations, and dosages
 - Describing the biomolecules that take part in life processes and the reactions that they undergo
 - Recognizing and evaluating the potential effects of diet, environment, over-the-counter medications, and pharmaceuticals on the human body
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MAKE-UP POLICY

There is no such thing as a make-up exam! Please do not make travel or other arrangements that conflict with the exam schedule. Homework will not be accepted for credit once the solutions have been posted. Attendance to lecture is not required, but is highly recommended, as attendance will be reflected in your participation in in-class activities. Consult your instructor's syllabus regarding policies for lab lecture and lab.

CourseWeb

We will use CourseWeb for access to course documents such as assignments, solutions, and files for lab. Grades will not be posted on CourseWeb. All exams will be returned in class. Quizzes and lab reports will be returned during lab lecture and lab.

Poll Everywhere

For interactive in-class activities, we will be using Poll Everywhere. Poll Everywhere is a free student interaction system that will allow you to answer questions and provide feedback using a web browser, mobile app, or SMS text messaging. Instructions for using Poll Everywhere can be found on CourseWeb, and we'll have plenty of practice getting it up and running!

ACADEMIC INTEGRITY POLICY

Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, from the February 1974 Senate Committee on Tenure and Academic Freedom reported to the Senate Council, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz or exam will be imposed.

DISABILITY RESOURCES

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both me and the Disability Resources and Services (www.drs.pitt.edu) as soon as possible. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call 412-648-7890 (Voice or TDD) to schedule an appointment. The office is located in 216 William Pitt Union.

CLASSROOM RECORDING

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

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Course Schedule

Date	Lab Lecture		Lab	
	Chapter	Topic	Experiment	Page
Thursday, January 11	1 and 2	Units, Scientific Notation, Conversions	Safety, & Check-In	1
Monday, January 15		Dr. Martin Luther King's birthday observance		
Thursday, January 18	2	Significant Figures, Density	Accuracy and Precision: Calibration of Volumetric Glassware	4
Thursday, January 25	6	Atomic Structure, Bonds, VSEPR	The Shapes of Molecules: VSEPR Theory	11
Thursday, February 1	7	Chemical Reactions, Moles	Stoichiometric Relationships: Moles, Grams, and Balanced Equations	15
Thursday, February 8	8	Gas Laws	Stoichiometric Relationships: Limiting Reagents and Percent Yield	20
Thursday, February 15		General Chemistry Review		
Monday, February 19		Exam 1		
Thursday, February 22	10	Acids and Bases, pH	Acids, Bases, and Salts: The Determination of pH	25
Thursday, March 1	10	Acid-Base Titrations	Acids and Bases: Neutralization and Titration	31
March 5-9		Spring Break		
Thursday, March 15	11, 12, 14	Organic Functional Groups	Chemical Tests: Functional Groups	39
Thursday, March 22	11,12, 14	Nomenclature Practice		
Thursday, March 29	11, 12, 14	Organic Reactions	Organic Synthesis: Making Esters	48
Friday, March 30		Exam 2		
Thursday, April 5	15	Lipids	Biomolecules: The Conversion of Lipids to Soaps	53
Thursday, April 12	17	Nucleic Acids	Biomolecules: The Isolation of DNA from <i>Escherichia Coli</i>	61
Thursday, April 19	16	Proteins, Review for Final	Check-Out	
Thursday, April 26		Final Exam (8-9:50 AM)		