

Chemistry 1312-004 Spring 2013

Contact Information

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Course Information

Department: Physical Sciences

Start Date: 01/22/2013

End Date: 05/16/2013

Modality: Face-to-Face

Credits: 3 hour

Lecture: MWF 11:00 – 11:50 am

Required Reading/Material

Chemistry 12th edition, T.L. Brown, H.E. LeMay, B. E. Bursten, C. J. Murphy, P. M. Woodward, Prentice Hall, 2012.

Simple Scientific calculator

(Programmable calculators cannot be used on quizzes or exams)

Course Prerequisites

Math 1314 and a minimum grade of "C" in CHEM 1311

Course Corequisite: CHEM 1112

ICOs

1, 2, 3, 5

Course Description

The overall goal of the General Chemistry courses is to teach students to think about the properties and behavior of the macroscopic world in terms of the structure and arrangement of the constituent molecules and atoms. Specifically in CHEM 1312, aspects of energy and enthalpy are emphasized through problem-solving questions.

Course Objectives

Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry.

Learning Outcomes

Upon successful completion of this course, students will:

1. State the characteristics of liquids and solids, including phase diagrams and spectrometry.

2. Articulate the importance of intermolecular interactions and predict trends in physical properties.
3. Identify the characteristics of acids, bases, and salts, and solve problems based on their quantitative relationships.
4. Identify and balance oxidation-reduction equations, and solve redox titration problems.
5. Determine the rate of a reaction and its dependence on concentration, time, and temperature.
6. Apply the principles of equilibrium to aqueous systems using LeChatelier's Principle to predict the effects of concentration, pressure, and temperature changes on equilibrium mixtures.
7. Analyze and perform calculations with the thermodynamic functions, enthalpy, entropy, and free energy.
8. Discuss the construction and operation of galvanic and electrolytic electrochemical cells, and determine standard and non-standard cell potentials.
9. Define nuclear decay processes.
10. Describe basic principles of organic chemistry and descriptive inorganic chemistry

Course Attendance

Attendance is required and will be checked. To effectively master the material, your **attendance** for each class is necessary.

Academic Honesty

Students are responsible for understanding the code of Student Conduct found in the OC Student Handbook. Academic Dishonesty will not be tolerated in this course. Cheating in any form will be handled accordingly.

Students with Disability

Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the ADA of 1990. Students with special needs or issues pertaining to access and participation in this class must contact me immediately. Further, you may call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

Cell Phone

When class begins, all phones need to be on silent or vibrate. If it is necessary for you to answer your phone or text message, then you need to step out into the hallway. If you consistently text message while in class, you will be asked to leave the class. Your phone **cannot** be used as a calculator on quizzes or exams.

Course Grading

Exams	60%
Quizzes	10%
Homework	10%
Final Exam	20%

Homework

Assignments will be made, collected and graded for completeness. The homework assignments are to help you prepare for the exams because variations of these will be on the exam. You should attempt to work all of the homework questions. Answer key will be posted the day before it's due. Homework **will not be accepted** more than two class days late.

Quizzes

There will be a short quiz given once each chapter is completed. The quizzes will include questions and problems over the current material but may require some knowledge of the previous material. Your lowest quiz grade will be dropped at the end of the semester. **If you miss a quiz, be prepared to make it up on the day you return to class**, otherwise you will not be allowed to make it up.

Examinations

(tentatively)

First Exam: Wednesday, February 20th
Second Exam: Wednesday, March 27th
Third Exam: Wednesday, May 1st
Final Exam: Wednesday, May 15th, at 11:00 a.m.-1:30 p.m.

Final Exam

The final exam is comprehensive over **both** semesters!!!!!!

Make-Up Exam

A make-up exam will be given on the last day of class before finals. If you miss an exam for any reason you will have the opportunity to take this exam. Any student who may wish to replace a lower exam may also take this exam. The make-up exam will be multiple choice questions covering the entire semester.

Expectations for Engagement – Face to Face Learning

To help make the learning experience fulfilling and rewarding, the following Expectations for Engagement provide the parameters for reasonable engagement between students and instructors for the learning environment. Students and instructors are welcome to exceed these requirements.

Reasonable Expectations of Engagement for Instructors

1. As an instructor, I understand the importance of clear, timely communication with my students. In order to maintain sufficient communication, I will
 - provided my contact information at the beginning of the syllabus;
 - respond to all messages in a timely manner through telephone, email, or next classroom contact; and,
 - notify students of any extended times that I will be unavailable and provide them with alternative contact information (for me or for my supervisor) in case of emergencies during the time I'm unavailable.

2. As an instructor, I understand that my students will work to the best of their abilities to fulfill the course requirements. In order to help them in this area, I will
 - provide clear information about grading policies and assignment requirements in the course syllabus, and
 - communicate any changes to assignments and/or to the course calendar to students as quickly as possible.
3. As an instructor, I understand that I need to provide regular, timely feedback to students about their performance in the course. To keep students informed about their progress, I will
 - return classroom activities and homework within one week of the due date and
 - provide grades for major assignments within 2 weeks of the due date or at least 3 days before the next major assignment is due, whichever comes first.

Reasonable Expectations of Engagement for Students

1. As a student, I understand that I am responsible for keeping up with the course. To help with this, I will
 - attend the course regularly and line up alternative transportation in case my primary means of transportation is unavailable;
 - recognize that the college provides free wi-fi, computer labs, and library resources during regular campus hours to help me with completing my assignments; and,
 - understand that my instructor does not have to accept my technical issues as a legitimate reason for late or missing work if my personal computer equipment or internet service is unreliable.
2. As a student, I understand that it is my responsibility to communicate quickly with the instructor any issue or emergency that will impact my involvement with or performance in the class. This includes, but is not limited to,
 - missing class when a major test is planned or a major assignment is due;
 - having trouble submitting assignments;
 - dealing with a traumatic personal event; and,
 - having my work or childcare schedule changed so that my classroom attendance is affected.
3. As a student, I understand that it is my responsibility to understand course material and requirements and to keep up with the course calendar. While my instructor is available for help and clarification, I will
 - seek out help from my instructor and/or from tutors;
 - ask questions if I don't understand; and,
 - attend class regularly to keep up with assignments and announcements.

HELP

Please do not wait until the last minute to get help! Come in during office hours or make an appointment to see **ME** as soon as a concept or problem gives you difficulty. I am here to help you make it through this experience.

Learning Resource Center (Library)

The Library, known as the [Learning Resources Center](#), provides research assistance via the [LRC's catalog \(print books, videos, e-books\)](#) and [databases \(journal and magazine articles\)](#). [Research guides](#) covering specific subject areas, [tutorials](#), and the ["Ask a Librarian"](#) service provide additional help.

Student E-mail

Please access your [Odessa College Student E-mail](#), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

Student Portal

Please access your [Odessa College Student E-mail](#), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

Technical Support

For Blackboard username and password help and for help accessing your online course availability and student email account contact the Student Success Center at 432-335-6878 or online at https://www.odessa.edu/dept/ssc/helpdesk_form.htm.

Important School Policies

For information regarding student support services, academic dishonesty, disciplinary actions, special accommodations, or student's and instructors' right to academic freedom can be found in the [Odessa College Student Handbook](#).

Course Schedule (tentatively)

<u>ChapterTopics</u>		<u>Descriptions</u>	<u>Type</u>
XI	Liquids, Solids, and Materials	Particle Interactions	Quiz
XIII	Chemical Kinetics: Rates of Reactions	Rate Laws	Quiz
XIV	Chemical Equilibrium	Le Chatelier's Principle	Quiz
	Eleven, Thirteen, and Fourteen		Exam
XV	The Chemistry of Solutes and Solutions	Solubility	Quiz
XVI	Acids and Bases	Ionization Constants	Quiz
XVII	Additional Aqueous Equilibria	Buffer Solutions	Quiz
	Fifteen, Sixteen, and Seventeen		Exam
XIII	Thermodynamics: Directionality of Chemical Reactions	Gibbs Free Energy	Quiz
XIX	Electrochemistry and it's Applications	Standard Potentials	Quiz
XXI	The Chemistry of the Main Group Elements	Metals and Halogens	Quiz
	Eighteen, Nineteen, and Twenty-one		Exam
XXVII	Organic Chemistry I: Formulas, Names and Properties	Hydrocarbons	Quiz
	Final Exam		Final Exam

Good Luck this Semester!!!!!!!!!!

1312 HOMEWORK SET

CHAPTER XI

1, 2, 3, 7, 9, 11, 12, 18, 20, 22, 23, 25, 29, 35, 37, 40, 43, 45, 46, 52, 54, 58, 61, 82

CHAPTER XII

7, 9, 11, 12, 35, 49, 61, 62, 64

CHAPTER XIII

1, 5, 7, 9, 15, 16, 25, 29, 33, 41, 47, 57, 62, 71, 73, 75, 81

CHAPTER XIV

1, 3, 12, 15, 27, 28, 33, 35, 37, 57, 59, 75, 77, 112

****EXTRA CREDIT PAPER**

CHAPTER XV

7, 11, 16, 21, 23, 33, 35, 45, 51, 53, 57, 61

CHAPTER XVI

1, 3, 7, 17, 21, 29, 31, 38, 43, 45, 58, 59, 71, 73, 81, 83, 89, 97

CHAPTER XVII

1, 6, 21, 23, 37, 41, 43, 45, 51, 55, 59, 71, 73, 96

****EXTRA CREDIT PAPER**

CHAPTER XVIII

6, 29, 41, 42, 48, 51, 76

CHAPTER XIX

4, 11, 15, 21, 25, 37, 43, 47, 53, 59, 65, 78, 81, 97

CHAPTER XX

5, 6, 8, 16, 17, 21, 27, 37, 43, 55, 91

****EXTRA CREDIT PAPER**