

Chemistry 1312-001 Summer 2012

Contact Information

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Course Information

Department: Physical Sciences

Start Date: 07/09/2012

End Date: 08/09/2012

Modality: Face-to-Face

Credits: 3 hour

Lecture: M-TH 9:20 am – 11:35 am

Required Reading/Material

Text: Chemistry: The Central Science, 12th edition, Brown, T, LeMay, H, Bursten, B, Murphy, C, Woodward, P. Prentice Hall, 2012.

Required: 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

SCANS

1, 3, 6, 9

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** 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:	Tuesday, July 17 th
Second Exam:	Thursday, July 26 th
Third Exam:	Thursday, August 2 nd
Final Exam:	Thursday, August 9 th , class time

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.

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.

The Odessa College Student Success Coaches will help you stay focused and on track to complete your educational goals. If an instructor sees that you might need additional help or success coaching, he or she may submit a Retention Alert or a Starfish Alert. A Student Success Coach will contact you to work toward a solution.

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](http://www.odessa.edu/gmail/), 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](http://www.odessa.edu/gmail/), 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>Chapter</u>	<u>Topics</u>	<u>Descriptions</u>	<u>Type</u>
XI	Liquids and Intermolecular Forces	Particle Interactions	Quiz
XII	Solids and Modern Materials	Solid Interactions	Quiz
XIII	Properties of Solutions	Solution Interactions	Quiz
XIV	Chemical Kinetics	Reaction Rates	Quiz
	Eleven, Thirteen, and Fourteen		Exam
XV	Chemical Equilibrium	Le Chatelier's Principle	Quiz
XVI	Acid-Bases Equilibria	pH Scale	Quiz
XVII	Additional Aqueous Equilibria	Buffer Solutions	Quiz
	Fifteen, Sixteen, and Seventeen		Exam
XIII	Chemistry of the Environment	Green Chemistry	Quiz
XIX	Chemical Thermodynamics	Gibbs Free Energy	Quiz
XX	Electrochemistry	Cell Potentials	Quiz
	Eighteen, Nineteen, and Twenty-one		Exam
XXIV	Chemistry of Life	Intro to Organic	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**