

CHEMISTRY 1306
SUMMER II 2014
MTWRF 8:10 - 10:20 a.m., UGLC 126
July 8 - Aug 4

Instructor: **Dr. Juan C. Noveron**

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Office: **Chemistry and Computer Science Bldg. Room 2.042**

Office hours: **MWF, 10:30 A.M. - 11:30 and by appointment**

Required Textbook: *Chemistry*, by Raymond Chang (11th Ed. preferably, or any edition is ok)

Required Software: *CONNECT from McGraw Hill* (bundled with new textbooks or bought separately).

Register to CONNECT using the CONNECT serial found in a new book that comes bundled with CONNECT, or purchase the access code to CONNECT. After accessing CONNECT, you can find our class following this link:

<https://connect.mheducation.com/class/j-noveron-che1306-summer-ii-2014-810am-m-f>

If you have trouble with registration, please contact Customer Support at <http://bit.ly/StudentRegistration>.

Online Resources: (a) Blackboard course shell for this course is available via <https://my.utep.edu/>

PREREQUISITES

CHEM 1305, CHEM 1105, and MATH 1508 (or MATH 1411 or a math SAT score of at least 600) are prerequisites for this class and must have been passed with a "C" or better. CHEM 1106 (Lab) may be taken concurrently with CHEM 1306.

NATURE OF THE COURSE

This is the second part of General Chemistry for scientists, engineers and pre-medical students. It covers the fundamental aspects of intermolecular forces in Nature, properties of solutions, the rate of chemical change and reaction mechanisms, chemical equilibrium, thermodynamics, electrochemistry, nuclear chemistry, and an introduction to organic chemistry.

WORKSHOP

Workshop is a required component of CHEM 1306 and every student must be co-enrolled in a Workshop section. There are several Workshop sections for Summer II 2008. Workshop is NOT the same as CHEM 1106 Laboratory. Each Workshop meets for a two-hour period, twice a week, and is instructed by a Peer Leader, and has a grading policy based on participation, HW, and quizzes. The Workshop format allows for Peer-led Team Learning (PLTL) activities and exploration of chemical demonstrations related to principles discussed in lecture. Goggles and a laboratory lab coat are required and must be worn during all chemical explorations.

GRADES

Grades will be calculated according to the following table:

- Four Exams (100 points/each, 400 points total)
 - In-class attendance credit (5 points/each, 100 points total)
 - Homework (150 points)
 - Workshop (150 points)
 - Final Exam (200 points)
- TOTAL = 1000 points**

HOMEWORK

Homework will be based on the On-Line CONNECT software. Any PC (Windows based only) computer with internet access may be used. Computers with internet access are available in the Physical Science Building ACES Center and the UTEP library. No late HW will be credited.

EXAM POLICY

No makeup exams will be available. All exams will count for credit. Students may apply to the Center for Accommodations and Support Services; for more information, contact: phone:(915) 747-5148 Union Building East Room 106 or e-mail: cass@utep.edu

CLASSROOM ETIQUETTE

Anything that detracts from the classroom experience should be avoided. Cell phones and beepers must be turned off at the beginning of the period. You may tape the lecture if you ask permission first. Smoking is illegal in university buildings. Eating and drinking is not permitted in class. Tardiness is distracting and is discouraged. Casual coming and going should be avoided. Unless there is an emergency, leaving early is permitted only with consent of the instructor which must be obtained before class. Students should not talk to each other while the instructor is lecturing or while other students are asking questions.

STUDY SKILLS

Success in college is highly dependent on developing good habits, particularly regarding studying skills. Good habits include keeping perfect attendance, taking useful notes, asking questions inside and outside the classroom, joining or leading study groups, doing all the homework, and attending office hours regularly.

GOALS AND OBJECTIVES

We will cover the following material from the textbook.

Week of July 7: Review of CHE1305 Chp 1 – 10 and Chp 11 & 12.

Week of July 14: Chp 13 – 16

Week of July 21: Chp 17 – 18

Week of July 28: Chp 19 – 24

Exam I on July 14

Exam II on July 21

Exam III on July 28

Exam IV on Aug 1

Final Exam Monday Aug 4th

- 1) Lecture 1 Review from CHE1305 - dates: 7/8
- 2) Chemistry of Carbon (Chp 11) - 7/9
- 3) Intermolecular Forces, Liquids/ Solids (Chp 13) , 7/10-11 a) Intermolecular Forces
 - b) Properties of Liquids c) Solids
 - d) Phase Changes e) Phase Diagrams
- 4) The Properties of Solutions (Chp 14), 7/14, 15 a) Solutes and Solvents
 - b) Concentration Units
 - c) Factors Affecting Solubility d) Colligative Properties
 - e) Colloids
- 5) Chemical Kinetics (Chapter 15), 7/16, 17 a) Concentration and Rate
 - b) Rate Laws
 - c) Integrated Rate Laws
 - d) Activation Energy and Temperature e) Reaction Mechanisms
 - f) Catalysis

EXAM 1, 7/18

- 6) Chemical Equilibrium (Chapter 16), 7/21 a) Equilibrium and Composition

- b) Using Equilibrium Constants
- c) Response of Equilibrium to Changes in the Conditions: LeChâtelier's Principle
- 7) Acids and Bases (Chapter 17), 7/22
 - a) Bronsted-Lowry Acids and Bases: pH
 - b) Weak Acids and Bases
 - c) Solutions of Weak Acids and Bases d) Lewis Acids and Bases
- 8) Additional Aspects of Aqueous Equilibria (Chp18), 7/23,24 a) The pH of Ionic Solutions
 - b) Titration
 - c) Buffer Solutions
 - d) Solubility Equilibria
- 9) Chemical Thermodynamics (Chapter 19), 7/25
 - a) Spontaneous Change and Entropy: Second Law b) Gibbs Free Energy
- 10) Electrochemistry (Chapter 20), 7/28, 29
 - a) Balancing Redox Reactions in Aqueous Media b) Electrolysis
 - c) Galvanic Cells
- 11) Nuclear Chemistry (Chp 23), 7/30,31
 - EXAM 2, 8/1**
 - FINAL EXAM, 8/5**