

General Chemistry 1305
Syllabus
Summer 1 Term 2015

I. Instructor:

Dr. Dino Villagrán
Course CRN: 30751
Lecture: MTWRF 0810 – 1020
Location: UGLC 128
Office Hours: TW 12 – 1 PM
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II. Learning Goals and Student Outcomes:

This is the first part of General Chemistry for scientists, engineers and pre-medical students. The students in the class will gain knowledge in the foundations of atomic and molecular structure, nomenclature, physical and chemical changes of matter, fundamentals of chemical reactivity, chemical bonding, thermochemistry and the properties of gases. This lecture has two components that all students must attend: **CHEM 1305 Lecture and CHEM 1305 Lecture Workshop**. If you don't understand what this means ASK.

Prerequisites: In order to be enrolled in Chemistry 1305, you should have:

- Passed or be concurrently enrolled in Math 1508 or
- Have achieved an SAT Math score of 600 or better.

Student Major:

The CHEM 1305 - 1306 sequence is designed for students who are majoring in a field of science or engineering. Students majoring in other disciplines may prefer to take the CHEM 1407 - 1408 sequence which contains more descriptive and less quantitative material.

Summer Term:

The summer term forces the instructor to go at a very fast step. It is imperative for students to keep up with the assigned textbook reading EVERY DAY. Homework is an important component of learning. Due to the pace of the summer term, you will have to work daily on your homework, otherwise you will fall behind. It is to your own benefit to be diligent in terms of your assigned reading, homework, and studying.

III. Course Information:

Required Textbook:

Chemistry, by Raymond Chang, Eleventh Edition, McGraw-Hill Science. This textbook will be used in the CHEM 1306 course (second semester general chemistry) next semester. Earlier editions of the same book (i.e. tenth or ninth editions) may also be used (and may be purchased at a lower price).

Curriculum:

Chemistry 1305 covers chapters 1 - 10 in *Chemistry* by Chang and is the first semester of the two-semester sequence in general chemistry at UTEP. This class is rigorous and demanding and **should not be attempted without adequate mathematical preparation**. Any subsections in the text, which are not to be tested on examinations, will be so indicated by me; however, reading all sections in each chapter is to your advantage. You are expected to read every chapter, and attempt the problems in

the back of each chapter. If you read each chapter prior to the lectures, the content of the course will be significantly more accessible to you.

Summer classes can be difficult and tedious. For your benefit, spend a minimum of 3 hours per day reviewing the content discussed in the lecture.

The topics to be covered in the lecture will be:

1. Chemistry: the Study of Change
2. Atoms, Molecules, and Ions
3. Mass Relationships in Chemical Reactions
4. Reactions in Aqueous Solutions
5. Gases
6. Thermochemistry
7. Quantum Theory and the Electronic Structure of Atoms
8. Periodic Relationship Among the Elements
9. Chemical Bonding: Basic Concepts
10. Molecular Geometry and Hybridization of Atomic Orbitals

Required attendance to Workshop:

- There are 8 Workshop sections for Summer 1 2015.
- Workshop is a required component of CHEM 1305. **Every student enrolled in a 1305 lecture section must also be co-enrolled in a Workshop section.**
- Workshop is NOT the same as CHEM 1105 Laboratory.
- Each Workshop meets for a two-hour period, and is instructed by a Peer Leader. The Workshop format allows the Peer Leaders to use active learning techniques to enhance understanding of the chemical principles discussed in class. It also provides opportunities for hands-on exposure to qualitative and descriptive chemistry activities (Explorations).
- You will need to purchase the Workbook “General Chemistry by Exploration: Resource Book for Peer-Led Team Learning First Semester”, Spring 2015 Edition, ISBN 978-0-9896205-7-4. available from the bookstore. Make sure you buy the one that corresponds to the FIRST semester of General Chemistry. (It says so in the first page). The purchase of this workbook is **mandatory**.
- Grading policy for **workshop** is based on participation and involvement. Absence, tardiness, or leaving early from Workshop will result in a grade reduction in the overall CHEM 1305 grade.
- Goggles will be provided and must be worn during ALL chemical Explorations.
- Peer Leaders: There are eight Peer Leaders (PLs) teaching in the CHEM 1305 Workshop Program this summer term. Each PL has specified office hours each week in the Physical Science ACES area and the schedule of their office hours will be posted in blackboard. *You* may consult with any PL during her or his office hours, not just the PL in charge of your specific Workshop section.

Homework:

This course covers Chapters 1-10 in the book Chemistry, 11th edition by Raymond Chang, McGraw-Hill Publishers. The 9th or the 10th editions may also be used for this course, but the numbers of the problems and sections may be different (if used, it is the student’s complete responsibility to resolve numerical differences). The 11th edition textbook can be also used in the CHEM 1306 course (second semester general chemistry) next semester. The book’s homework website is <http://connect.mcgraw-hill.com>. The electronic homework required for the course is called CONNECT. It is from the same publisher as the book. CONNECT comes with the CHANG 11th ed. (but not with other editions), so if you

purchase editions other than the 11th you will have to purchase CONNECT online separately. The cost of CONNECT alone is about \$50. If you decide to use the 11th ed. of CHANG, then CONNECT may come with it. The CHANG 11th ed. e-Book+ CONNECT is also an acceptable option.

The following website is where all the homework assignments will be made:

http://connect.mcgraw-hill.com/class/d_villagran_summer2015

You will use this link (above) to access our homework every time. More details will be provided in class.

Resources:

1. Announcements will be made using Blackboard. All notes from lecture will be posted on Blackboard.

Accessing Blackboard

- 1.1. You can access Blackboard via your myUTEP page but you will need your email username and password. If you don't know your email username and password, call the HELP desk to request them (915-747-HELP).
- 1.2. Go to My.UTEP.edu and log in
- 1.3. Click on Blackboard — it's on the menu bar at the top of the page.

2. Office Hours:

Dr. Villagrán Office hours will be from 12 to 1 PM Tuesdays and Wednesdays. Peer-leaders will tell you their own office hours during their respective workshops.

Instructor Expectations:

Every student shall attend all lectures and workshops. Daily homework will be assigned and it will be due on the day announced. Late homework will not be credited. Students will attend review sessions given by Peer Leaders and practice answering questions and problems from within the chapters and those at the end-of-chapter if available. It is highly recommended that the student will read over the appropriate pages in the textbook and complete the required homework on time.

Course Withdrawal Policy

Classes dropped prior to the official census date (**06/26/2015**) will be deleted from the student's semester record. After this date, the University permits any student to drop with an automatic "W" until **06/26/2015**. After this date students who withdraw must receive grades of "F".

IV. Laboratories

CHEM 1105 is a separate course from CHEM 1305 while the Workshop is an integral part of CHEM 1305. The laboratory is highly recommended for all students regardless of major.

V. Examinations:

- Four one-hour examinations and a Final are scheduled according to the schedule in Section IX. Three exam grades will count towards the overall grade.
- Examinations will typically be held on Fridays at 8:10 AM. After the exam there will be time for lecture time from approximately 9:20 to 10:20 AM.
- Exam 1 will cover chapters 1, 2 and parts of 3. Exam 2 will cover mainly chapters 3, 4, 5, but may include questions from previous chapters. Exam 3 will mainly cover chapters 6, 7, 8, and again it may include questions from previous chapters. Exam 4 will cover chapters 8, 9, and 10 and previous chapters.
- The American Chemical Society Exam for General Chemistry will be used as the final exam. The score of this examination is highly reflective of student's understanding of the main concepts of the course. Therefore, it is imperative that a deep understanding of the subject is achieved. This can be

accomplished by attending lectures, doing all the HW, consulting the instructors and Peer Leaders during office hours, and actively reading the textbook. The Final Exam is comprehensive.

- **You must pass the Final Examination in order to pass the course.** Failing the Final Examination will automatically prevent you from passing the course.
- CHEM 1305 examination questions are designed to test: **i)** understanding of basic concepts, and **ii)** familiarity with chemical nomenclature, usage and calculations. Examinations emphasize problem solving as opposed to memorization. You are well advised to learn the process involved in problem solving rather than memorization of specific facts. Valid absences for University related activities (e.g. out-of-town research presentations, sporting events) must be arranged **prior** to the date of the respective examination. No provision exists for makeup of examinations missed as a result of unexcused absences.

NO CELL PHONES, TABLETS, LAPTOPS, OR OTHER ELECTRONIC DEVICES MAY BE ON OR USED DURING EXAMINATIONS INSIDE OR IMMEDIATELY OUTSIDE THE EXAMINATION ROOM.

- We will be using Apperson AccuScan™ answer recording sheets. Peer-leaders will be able to help you buying them. The ACS student chapter also sells them.
- Any student found using an electronic device during an examination will receive a grade of zero on the examination.
- No caps or hats may be worn during examinations. **Bring a photo identification card to all examinations to display when turning in your examination.**
- **Do not** bring programmable calculators (i.e. a calculator capable of retaining equations or words) to the hour examinations and the final examination. Anyone found using a programmable calculator will receive a grade of zero. You can purchase a satisfactory calculator which can perform logarithmic and exponential operations (needed for Chem. 1306) for less than \$10 at many stores.

VI. Grades: (*Grading is subject to revision.*)

We will use the best three grades out of the four examinations (i.e. the lowest exam grade dropped).

| | |
|-----------------------------------|-------------------|
| 1. Best 3 of Exams I, II, III, IV | 300 pts. |
| 2. Home Work | 100 pts. |
| 3. Workshop | 200 pts. |
| 4. <u>Final</u> | <u>200 pts.</u> |
| TOTAL | = 800 pts. |

As a good approximation, a total of 720 points or better will yield an A; 640-719 a grade of B; 560-639 a grade of C; 480 to 559 a grade of D, and 479 and below will result in a grade of F.

You must pass the Final Exam in order to get a grade of C or better.

During the regular one hour examinations, one or two questions *may be given* as extra credit (Not in the final!). **No additional extra credit will be awarded at any other time.**

VII. Academic honesty:

Materials (written or otherwise) submitted to fulfill academic requirements must represent a student's own efforts. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Violations will be taken seriously and will be referred to the Dean of Students Office for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions.

VIII. Students with Disabilities:

Student with a disability can contact Disabled Student Services to take exams with appropriate accommodations. The office is located in Room 106 Union East Building and can be contacted at (915) 747-5148 Voice/TTY, (915) 747-8712 Fax or at dss@utep.edu. If you have or believe you have a disability, you may do so by providing documentation to the Office of disabled Student Services.

IX. Lecture Schedule and Evaluation (This section is tentative and subject to change.)

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|--------------------------|--------------|-----------------|----------------------------|---------------------------------------|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 Ch 1 | 9 Ch 1&2 | 10 Ch 2&3 | 11 Ch 3 HW1&2 Due | 12 Ch 3 Exam 1 | 13 |
| 14 | 15 Ch 4 HW3 Due | 16 Ch 4&5 | 17 Ch 5 | 18 Ch 6 HW4&5 Due | 19 Ch 6 Exam 2 | 20 |
| 21 | 22 Ch 7 HW6 Due | 23 Ch 7 | 24 Ch 8 | 25 Ch 8 HW7 Due | 26 Ch 9 Exam 3 | 27 |
| 28 | 29 Ch 9 HW8 Due | 30 Ch 10 | July 1 Ch 10 | July 2 Exam 4 | July 3 Final Exam HW9&10 Due | |