Course	**CHEM 1311: General Chemistry I**
Professors	Dr. Warren Goux
Term	Spring 2009
Meetings	Section 001: MWF 9:30 am – 10:20 pm, FN 2.102

Professor's Contact Information

Office Phones	972-883-2660
Office Locations	BE 3.510
Email Addresses	wgoux@utdallas.edu
Office Hours	1:30 – 2:30 pm Th, F or by appointment
Other Information	Best way to contact us: email listed above; I don't read WebCT email

General Course Information

Pre-requisites, Co-requisites, & other restrictions	One year of high school chemistry is assumed.
Course Description	Introduction to elementary concepts of chemistry theory. The course emphasizes molecular structure and bonding, chemical reactions, and the mole concept and its applications.
Learning Outcomes	*Objectives* This course is the first of a two-course sequence. The goal is to provide students with a working knowledge of the basic concepts of general chemistry needed for creative problem solving, as well as a background for advance chemistry and related science courses, and for laboratory applications. The course focuses on the following: the architecture of the atom; molecular structure and bonding; chemical reactions; thermochemistry; the mole concept and its applications; and the properties of solids, liquids and gases. Basic problem solving skills and critical thinking are also emphasized. *Expected Learning Outcomes* Upon successful completion of this course, students will therefore: 1) be able to use basic concepts in quantum theory and chemical bonding theory by predicting both the chemical properties (e.g. periodic trends, reactivities) and the electronic and 3-dimensional structures of representative compounds 2) be able to interpret experimental data (in both tabular and graphical form) by appropriately setting up and solving scientific problems using dimensional analysis with proper attention to scientific units and significant figures 3) be able to demonstrate an understanding of the role of energy in physical changes and chemical reactions by predicting the direction and magnitude of energy changes and by performing thermochemical calculations 4) be able to demonstrate an understanding of the properties of gases by applying the gas laws and kinetic molecular theory to processes involving gases
Required Texts & Materials	1. Textbook: *Chemistry, 1st Edition* (Julia Burdge); McGraw-Hill 2. course materials located on WebCT at http://webct6.utdallas.edu/ 3. ARIS online assignment system (http://aris.mhhe.com) 4. A scientific calculator (any type) 5. 4 scantron forms F-1712-Par-L.
Supplemental Materials	1. *General Chemistry* version 3.0 (interactive DVD-ROM covering one year of freshman general chemistry); available through CSA or online at http://www.t2i2edu.com

Schedule & Academic Calendar

Class Period	Day	Date	Topic	Chapter
1	Mon	12-Jan	Introduction	
2	Wed	14-Jan	Atomic Theory: structure of the atom;	2
3	Fri	16-Jan	atomic number; mass number and isotopes	
4	Mon	19-Jan	*MLK Day*	
	Wed	21-Jan	Atoms, molecules and ions; average atomic mass	2
5	Fri	23-Jan	molecular/ionic & empirical formulas; nomenclature	
6	Mon	26-Jan	Quantum Theory and electronic structure of the atom; light; quantum	6
7	Wed	28-Jan	line spectra of the atom; Bohr model; quantum numbers;	
8	Fri	30-Jan	atomic orbitals; electron configuration	
9	Mon	2-Feb	Electron Configuration and Periodic Table:	7
10	Wed	4-Feb	effective nuclear charge;	
11	Fri	6-Feb	effective nuclear charge;	
12	**Mon**	**9-Feb**	**Exam 1 (Chapt. 2, 6, 7)**	
13	Wed	11-Feb	Chemical Bonding I: Basic Concepts:	8.1-8.8
14	Fri	13-Feb	ionic bonding; covalent bonding;	
15	Mon	16-Feb	electronegativity; Lewis structures and formal charges;	
16	Wed	18-Feb	resonance and octet rule exceptions	
17	Fri	20-Feb	Chemical Bonding II: Molecular Geometry & Bonding Theories:	9
18	Mon	23-Feb	VSEPR theory; polarity;	
19	Wed	25-Feb	valence bond theory; hybridization;	
20	Fri	27-Feb	sigma and pi bonding;polarity;	
21	Mon	**2-Mar**	MO theory	
22	**Wed**	**4-Mar**	**Exam 2 (Chapters 8, 9)**	
25	Fri	6-Mar	Stoichiometry: Ratios of Combination	3
26	Mon	9-Mar	molecular/formula masses; % composition;	
25	Wed	11-Mar	the mole; determination of empirical and molecular	
26	Fri	13-Mar	formulas; stoichiometry with reactions; limiting reactants	
		16-Mar	*Spring break March 16 - 21*	
27	Mon	23-Mar	Reactions in Aqueous Solutions:	4
28	Wed	25-Mar	precipitation reactions;	
29	Fri	27-Mar	acid-base reactions;	
30	Mon	30-Mar	oxidation-reduction reactions; concentration units	
31	Wed	1-Apr	Thermochemistry:	5
32	Fri	3-Apr	introduction; state functions;	8.9
33	Mon	6-Apr	first law of thermodynamics; enthalpy;	
34	Wed	8-Apr	calorimetry; Hess's Law; bond enthalpies	
35	**Fri**	**10-Apr**	**Exam 3 (Chapters 3, 4, 5, 8.9)**	
36	Mon	13-Apr	Gases:	11
37	Wed	15-Apr	properties; gas laws;	
38	Fri	17-Apr	Ideal gas laws; Dalton's law of partial pressures;	
39	Mon	20-Apr	kinetic molecular theory; deviation from ideality	
40	Wed	22-Apr	Intermolecular Forces; Liquids and Solids:	12
41	Fri	24-Apr	IM forces; properties of liquids;	
42	Mon	27-Apr	crystal structures of solids;	
43	Wed	29-Apr	types of crystals and solids	
44	Fri	**1-May**	**Exam 4 (Chapters 11, 12)**	
45	Mon	4-May	Review for final exam	
		13-May	**Final Exam 8 am, FN 2.102**	

Course Policies

Grading (credit) Criteria

***Course Evaluation*:** Your letter grade in this course will be determined on the basis of the total points you accumulate during the semester out of 1,000 possible points. There are 4 hour exams (the lowest will be dropped), 10 quizzes (the lowest are dropped) and a final exam. There is no "grading curve" on exams or quizzes. The table below summarizes the total number of possible points for each mode of evaluation:

Assessment	Total points
Hour exams (3/4 x 20%)	600
Final exam (30%)	300
Quizzes (10%)	100
Total points	1,000

Letter grades will be assigned according to the following scale:

A+: 870 (inclusive) and above
A : 830 (inclusive) - 870
A-: 780(inclusine) - 830
B+: 760 (inclusive) - 780
B : 720 (inclusive) -760
B- : 680 (inclusive) - 720
C+: 650 (inclusive) - 680
C : 610 (inclusive) - 650
C- : 550 (inclusive) - 610
D+: 520 (inclusive) - 550
D : 480 (inclusive) - 520
D- : 450 (inclusive) - 480
F : below 450:

1. Homework assignments (end of chapter problems):

- assigned for each chapter from end-of-chapter exercises in *Burdge*
- large number of problems selected to cover majority of important concepts
- these will not be collected or graded
- all homework assignments for the next section will be posted the day after the previous exam
- Solutions to homework problems will be posted on webCT. **You must have a NetID in order to log on to WebCT.**

2. Quizzes (online in ARIS)

- one per chapter plus additional "Foundation Concepts" quizzes
- your 10 best quiz (10 points each) scores will be added together to give your quiz total
- You may access the quizzes through ARIS: http://highered.mcgraw-hill.com/classware/infoCenter.do?isbn=0073025542

- ***there will be no makeup quizzes given*** *(you will receive a "zero" for any quiz you miss)*
- each quiz will be composed of two parts:
  a. pre-quiz: -- approx. 5 questions (similar to homework)
  -- worth 25% of quiz score
  -- can take as many times as you want (top score counts)
  -- can take it anywhere you wish
  -- can work together, use notes and textbook
  b. proctored quiz:
  -- typically 2 to 4 questions
  -- similar to homework (and pre-quiz questions)
  -- worth 75% of quiz score
  -- only take once
  -- must take it independently (no working together, textbook or notes) at the Success Center (Conference Center, CN building)

	• All quizzes for the each section will be posted the day after the previous exam, and all quizzes will be due (i.e. access closed) at 5:00 pm on the day before the exam; you are encouraged to work at your own pace. This will give you approximately 3 weeks to complete ALL pre-quizzes and proctored quizzes for a given section. ***There are 120 students in this class and >400 students in CHEM 1312 which runs concurrently. ALL of you will be required to take the proctored quizzes at the Success Center (~50 computers). <u>So don't wait until the last couple days before the exam to try to take your quizzes—there will be no excuses accepted for unfinished quizzes</u>*** • You are required to take the proctored quizzes at the Success Center, and software on those computers track student access and usage to allow us to ensure this***. <u>Any attempt by a student to take the proctored quiz at a different location will be considered an act of scholastic dishonesty and will be dealt with appropriately (see Section "Academic Integrity" on a following page).</u>*** **<u>3. Midterm exams (scantron-based multiple choice exams):</u>** • ***There will be no makeup exams given*** • The lowest of the 4 exam scores will be dropped and 3 exams will count a total of 600 points (60% of the class point total) towards your final grade (200 points each). You will receive a score of "zero" for a missed exam. If you miss only one exam this "zero" will be dropped in calculating your exam score total. No more than one exam will be dropped during the semester. . Students having an official university excuse (i.e., participation in UTD sponsored sporting event, observance of religious holiday) may take the exam early. No make-up exams will be given for over-sleeping, illness, kid-is-sick, car-won't-start, auto accidents, out of town weddings, boy(girl)-friend just dumped me, work-related travel or any other reason not listed which does not fall into the category of an official university excuse. In these cases you may drop the exam grade at no penalty but it will count towards your drop. • You may arrive late for an exam ***up until the first student finishes and leaves*** (only penalty being that you will have proportionally less time to finish the exam). After this grace period you will not be allowed to take the exam and will receive a score of "zero" • Questions will focus on concepts and material covered in homework, pre-quizzes and quizzes. All questions will be multiple choice. • To all exams you will need to bring (1) a scientific calculator (any type) (2) A scantron form F-1712-Par-L. These forms may be purchased at the University Bookstore or off-campus bookstores. To insure availability it is best to purchase 4 or more of them ahead of time. **Before coming to class bubble in a 10 digit phone number (any phone number will work) for your ID number and write and bubble in your name**. **You may leave the space for phone number blank.** (3) A no. 2 pencil to be used on all exam questions. The instructor will not bring to class extra scantrons or calculators. This is your responsibility. • *Grading problems:* Errors in grading exams unfortunately occur. Errors in an exam question may also occur, despite the instructor having painstakingly proofed the exam beforehand. Following exams the keys will be posted on the WebCT website. **If you feel that an error has been made in grading of your exam you have up until one week after the exam is returned to bring the errors to the attention of the instructor**. **Errors found after this time will not be acknowledged but not considered for more credit.** **<u>4. Final exam (scantron-based multiple choice exams):</u>** • comprehensive exam • The final exam must be taken and cannot be replaced by any other grade, so don't miss it • ***No makeup final will be given***. ***<u>NOTE THE DAY AND TIME OF THE FINAL!</u>***
Make-up Exams	**There are no make up exams in General Chemistry I**

Extra Credit	If time allows students may be asked to come to the front of the class and work an assigned homework problem in class. In these "problem solving sessions" students will be called at random from the class and no student will be called upon more than once. If the problem is worked correctly the student will earn 10 points of extra credit. If a student is absent or declines to work the problem he forfeits his chance to earn extra credit. Once one student is called upon all students in the class will be called upon sometime during the semester.
Class Attendance	***Your attendance is CRITICAL for your ultimate performance in this class.*** Results from Fall 2006 support this statement: students that missed just 4 of the first 21 lectures ended up with D's, F's or withdrew from the course. ***Bottom line: DO NOT SKIP CLASS***
Student Conduct and Discipline	The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year. The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Series 50000, Board of Regents, The University of Texas System*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391) and online at: http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.
Peer Instructional Support **(SI/PLTL Programs)**	Two additional resources are available to facilitate your learning and development of study skills. Supplementary Instructors (SIs) are undergraduate students with mastery of course content. They will hold weekly tutorial sessions and exam reviews. Their hours and room assignments will be announced in class. Peer Led Team Learning (PLTL) is a new program designed to provide an active learning experience in which students can gain the skills and confidence to be successful learners in General Chemistry and, potentially, future courses. In weekly ninety-minute PLTL sessions, small groups of students will work together to solve problems written by Drs. Sibert and Dieckmann. An undergraduate PLTL leader who has training in group dynamics and mastery of course content will lead them. This is an optional component to the course. However, if you choose to participate, you are required to stay in the program throughout the semester—the integrity of the group depends on it. PLTL groups will begin the week after Labor Day. To participate in a PLTL group, you will need to complete the PLTL application form distributed in class. More details of this program will be announced in class.
Academic Integrity	The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

	Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.
Copyright Notice	The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software. Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owner's rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provide by federal law. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. As a UTD student, you are required to follow the institution's copyright policy (Policy Memorandum 84-I.3-46). For more information about the fair use exemption, see: http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm
Email Use	The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's UTD email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at UTD provides a method for students to have their UTD mail forwarded to other accounts.
Computer	Relevant course material including lecture notes, quizzes, exam keys, quiz keys, practice exams and homework solutions will be posted on WebCT. Quiz and exam grades will also be posted on WebCT. You may log onto the WebCT site using your UTD assigned net ID and password. If you have problems logging on to WebCT contact webct@utdallas.edu.
Technical Support	If you experience any problems with your UTD account, you may send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.
Withdrawal from Class	The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.
Student Grievance Procedures	Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*. In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.
Incomplete Grades	As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed.

	An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.
Disability Services	The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m. The contact information for the Office of Disability Services is: The University of Texas at Dallas, SU 22 PO Box 830688 Richardson, Texas 75083-0688 (972) 883-2098 (voice or TTY) disabilityservice@utdallas.edu If you anticipate issues related to the format or requirements of this course, please meet with the Coordinator of Disability Services. The Coordinator is available to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Services to notify them of your eligibility for reasonable accommodations. Disability Services can then plan how best to coordinate your accommodations. ***It is the student's responsibility to notify his or her professors of the need for such an accommodation.*** Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. ***Individuals requiring special accommodation should contact the professor ASAP after class or during office hours.***
Religious Holy Days	The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated. ***The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, in advance of the assignment.*** The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment. If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.