



<b>Course</b>	<b>CHEM 1312.081 General Chemistry II</b>
<b>Professor</b>	Dr. Warren J. Goux
<b>Term</b>	Summer 2008
<b>Meetings</b>	

### Professor's Contact Information

<b>Office Phone</b>	972-883-2660
<b>Office Location</b>	Berkner Hall (BE), room 3.510
<b>Email Address</b>	wgoux@utdallas.edu
<b>Office Hours</b>	TTh 11:00 am - noon or by appointment. Please contact me by phone or email before coming to see me outside office hours. This insures that I will be available for you.

### General Course Information

<b>Pre-requisites, Co-requisites, &amp; other restrictions</b>	CHEM 1311 or equivalent. One year of high school chemistry is assumed.
<b>Course Description</b>	A continuation of CHEM 1311 treating metals; solids, liquids, and intermolecular forces; chemical equilibrium; electrochemistry; organic chemistry; rates of reactions; and environmental, polymer, nuclear, and biochemistry.
<b>Learning Outcomes</b>	<p><u>Objectives</u> This course is the second of a two-course sequence. The goal of this course is to provide students with a working knowledge of how the basic concepts learned in CHEM 1311 apply to more complex chemical systems. The course focuses on the following: chemical equilibrium; rates of reactions; acid base chemistry, including buffer systems and acid/base titrations; electrochemistry; thermodynamics; nuclear chemistry; and basic organic chemistry concepts. Basic problem solving skills and critical thinking continue to be emphasized in this course.</p> <p><u>Expected Learning Outcomes</u> Upon successful completion of this course, students will therefore:</p> <ol style="list-style-type: none"><li>1) be able to use their understanding of intermolecular attractive forces that determine the properties of the states of matter and phase behavior by predicting colligative properties and the characteristics of solutions</li><li>2) be able to use the basic concept of equilibrium in writing equilibrium constant relationships, determining whether equilibrium has been established, calculating equilibrium concentrations, and predicting the effects of concentration, pressure and temperature changes on equilibrium mixtures (LeChatelier's Principle)</li><li>3) be able to apply the concepts of equilibrium to (a) understand common inorganic reactions that occur in aqueous solutions (e.g. acid-base, solubility-precipitation and oxidation/reduction reactions); (b) understand how chemical equilibria depend on <math>\Delta H</math>, <math>\Delta S</math> and <math>\Delta G</math>; and (c) determine standard and non-standard cell potentials and equilibrium constants from cell potential data for oxidation/reduction reactions</li><li>4) be able to demonstrate an understanding of the basic concepts of chemical kinetics and how rate and equilibrium properties are related by utilizing this knowledge to solve kinetics calculations and evaluate reaction mechanisms</li></ol>
<b>Required Texts &amp; Materials</b>	<i>Chemistry: Matter and Its Changes, 4th Edition</i> by James E. Brady and Fred Senese
<b>Suggested Texts, Readings, &amp; Materials</b>	<i>Study Guide for Chemistry: Matter and Its Changes, 4th Edition</i> by Brady  <i>Student Solutions Manual for Chemistry: Matter and Its Changes</i> by Nicholas Drapela

## Schedule & Topics Outline

Period	Date	Chapt	Topic	
1	23-May	12	Intermolecular Forces	<b>Quiz 1</b>
	26-May		Memorial Day Holiday	
2	28-May	12		
3	30-May	12		<b>Quiz 2</b>
4	2-Jun	20	Thermodynamics	
5	4-Jun	20		
6	6-Jun	20		<b>Quiz 3</b>
7	9-Jun	<b>Exam 1</b>		
8	11-Jun	14	Solutions	
9	13-Jun	14		
10	16-Jun	14		<b>Quiz 4</b>
11	18-Jun	16	Chemical Equilibrium	
12	20-Jun	16		
13	23-Jun	16		<b>Quiz 5</b>
14	25-Jun	<b>Exam 2</b>		
15	27-Jun	17	Acids and Bases	
16	30-Jun	17		
17	2-Jul	17		<b>Quiz 6</b>
	4-Jul		Fourth of July Holiday	
18	7-Jul	18	Acid and base Equilibrium	
19	9-Jul	18		
20	11-Jul	18		<b>Quiz 7</b>
21	14-Jul	19.1-19.3	Solubility	<b>Quiz 8</b>
22	16-Jul	<b>Exam 3</b>		
23	18-Jul	15	Kinetics	
24	21-Jul	15		
25	23-Jul	15		<b>Quiz 9</b>
26	25-Jul	21	Electrochemistry	
27	28-Jul	21		
28	30-Jul	21		<b>Quiz 10</b>
29	1-Aug	<b>Exam 4</b>		
30	4-Aug		Review for Final Exam	
31	11-Aug	<b>FINAL EXAM</b>	Final Exam	

## Course Policies

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 two are dropped) and a final exam. There is no “grading curve” on exams or quizzes. 2% of the total points possible are given for attendance. The table below summarizes the total number of possible points for each mode of evaluation:

<u>Assessment</u>	<u>Total points</u>
Hour exams (3/4 x 20%)	600
Final exam (30%)	300
Quizzes (8%)	80
<u>Participation (2%)</u>	<u>20</u>
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

### Grading (credit) Criteria

- (i) *Homework:* There will be assigned homework from the Brady textbook. These assignments will be posted on the WebCT website. It is important that you do ALL homework that is assigned, even if it is not graded—chemistry involves problem solving, and doing the homework will give you important practice. Solutions to homework problems will also be posted on webCT sometime prior to exams. You are ALWAYS welcome (encouraged with open arms!) to visit Dr. Goux and have him help you with these problems. There is no question too trivial. Some students have been known to camp outside his office.
- (ii) *Quizzes:* 10 Quizzes will be given and the two quizzes with the lowest scores will be dropped before calculating your quiz total. Quizzes count 10 points each toward your grade (80 points or 8% of your overall point total for the 10 quizzes with the highest scores). Quizzes do NOT require that you bring a scantron. Some quizzes will be given online through WebCT while others will be given in class. **You must have a NetID in order to log on to WebCT.** From the main menu go to the assessment tab. The quiz format (on-line or in-class) will be announced in class at least one lecture prior to the quiz date. Quiz 1 will cover the class syllabus. You must recall the password argon (spelled correctly) to receive full credit on quiz 1. Online quizzes are accessed through the Assessment tab in WebCT. Some of the quizzes allow you to go back and revisit questions (click the question number on the right) while others do not. You are encouraged to take your

online quizzes on-campus as remote WiFi connections are frequently lost. **There are no make-up quizzes.** Students having an official university excuse (i.e., participation in UTD sponsored sporting event, observance of religious holiday) may take the quiz early. No make-up quizzes will be given for over-sleeping, illness, kid-is-sick, car-won't-start, auto accidents, out of town weddings or other social events, work-related travel, inability to log on to WebCT, lost WiFi connections, 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 quiz grade at no penalty but they will count towards your drops.

(iii) *In-class participation:* 2% of your grade (20 points) will be determined by class attendance. Attendance will be taken 4 times during the semester and grace will be given for 2 absences. Excused absences will be given for official university events if the instructor is given at least one period notice (over and above the 2 grace absences). Absences may be counted for failure to pick up a quiz or exam in class (a sneaky way to take attendance).

(iv) *Exams:* **There will be no makeup exams given.** Exams may be taken early for official university events. 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.

*Bring:* 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 the Off-Campus Bookstore. To insure availability it is best to purchase 4 or more of them ahead of time. **Before coming to class bubble in the last six digits of your social security number as your ID (left justified) and write and bubble in your name.** (3) A no. 2 pencil to be used on all exam questions.

*Exam Format:* Exam format will vary from exam to exam. Generally, however, there will be only multiple choice questions. Should there also be short answer questions, use your scantron form to answer all multiple choice questions in the space on the scantron designated for that question. That is, if question #1 and #3 are short answer and #2 is a multiple choice question, you will mark your choice for question #2 in the space on the scantron for question #2. In the past homework problems from the text have appeared on the exam .

*What you have to memorize:* Chemistry is a science that requires both memorization and deduction using problem-solving skills. You will be expected to know all of the concepts contained in chapters and all mathematical equations needed to solve problems. You will also be expected to know names and symbols for all of the elements, common and systematic names for ions and their common oxidation states. You will be given a periodic table on all quizzes (where one is needed) and exams and you will be given physical constants and conversion factors. You will NOT be expected to memorize tables of data. If you are unclear on whether other information contained in chapters should be memorized, it is best to ask your instructor.

*Be On Time:* It is best to be early to exams. This will give you the

	<p>opportunity to mentally prepare yourself for the exam. ALL 4 "hour" exams will be 50 min long. You may arrive up until the first student finishes his/her exam (grace period), the 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". Note: There is no way of determining when the first student will finish his/her exam.</p> <p><i>Grading errors:</i> Errors in grading exams unfortunately occur, especially with larger class sizes and multiple TAs helping in the grading of the exam. Following exams the keys will be posted on the WebCT website and, if time allows, the solutions will be reviewed in class. <b>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 considered for more credit.</b></p> <p>(v) <i>Final Exam:</i> The final exam will be comprehensive and cannot be replaced by any other grade, so don't miss it. <b>The final exam cannot be dropped. No makeup final will be given.</b> Bring a scantron to the final exam.</p> <p><i>Final exam questions:</i> The final exam is comprehensive and approximately the same number of questions will be asked from each of the chapters covered in the text. Like the hour exams, it will be a mixture of short answer and multiple choice questions.</p>
<b>Make-up Quizzes &amp; Exams</b>	There are <b>no make-up quizzes or exams</b> (see above).
<b>Extra Credit</b>	There is <b>no extra credit</b> . However, you may obtain full credit by attending class and mentally being prepared to participate in class.
<b>Computer</b>	Relevant course material including lecture notes, quizzes, exam keys, quiz keys, practice exams and homework solutions will 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 <a href="mailto:assist@utdallas.edu">assist@utdallas.edu</a> or <a href="mailto:webct@utdallas.edu">webct@utdallas.edu</a> .
<b>Class Attendance</b>	<p>Your attendance and class participation will have an impact on your final grade (2% of the total points; see in class participation above). Taking an active role in your learning will help you perform better.</p> <p><i>Lecture material:</i> Lecture material in PowerPoint format may be downloaded from the WebCT site. This material will outline most of the basic concepts presented in class but will not contain examples and problems that are worked in class. Unless you come to class you will not be getting all of the material covered in lecture.</p>
<b>Student Conduct and Discipline</b>	<p>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, <i>A to Z Guide</i>, which is provided to all registered students each academic year.</p> <p>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 <i>Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3</i>, and in Title V, Rules on Student Services and Activities of the university's <i>Handbook of Operating Procedures</i>. 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,</p>

	<p>972/883-6391).</p> <p>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.</p>
<p><b>Academic Integrity</b></p>	<p>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.</p> <p>Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.</p> <p>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.</p>
<p><b>Email Use</b></p>	<p>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 U.T. Dallas 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. Mail sent to you by the instructor will be sent to your university email address. If you wish to use other email addresses, you will need to visit <a href="http://netid.utdallas.edu/">http://netid.utdallas.edu/</a> and set up mail forwarding.</p>
<p><b>Withdrawal from Class</b></p>	<p>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. The last day to drop without a "W" is June 6, 2006. The last day to drop the class with a "WP/WF" is July 5, 2006.</p>
<p><b>Student Grievance Procedures</b></p>	<p>Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's <i>Handbook of Operating Procedures</i>.</p> <p>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</p>

	<p>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.</p> <p>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.</p>
<b>Incomplete Grades</b>	<p>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 <b>F</b>.</p>
<b>Disability Services</b>	<p>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.</p> <p style="padding-left: 40px;">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)</p> <p>Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.</p> <p>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 after class or during office hours.</p>
<b>Religious Holy Days</b>	<p>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.</p> <p>The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment early.</p> <p>If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day], 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.</p>

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

