



Course	CHEM 1312.001 General Chemistry II
Professor	Dr. Warren J. Goux
Term	Fall 2007
Meetings	TTh 10:00 – 11:15 am, SOM 1.212

Professor's Contact Information

Office Phone	972-883-2660
Office Location	Berkner Hall (BE), room 3.510
Email Address	wgoux@utdallas.edu
Office Hours	TTh 9:00 am – 10:00 am 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

Pre-requisites, Co-requisites, & other restrictions	CHEM 1311 or equivalent. One year of high school chemistry is assumed.
Course Description	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.
Learning Outcomes	<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">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 solutions2) 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)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 ΔH, ΔS and ΔG; and (c) determine standard and non-standard cell potentials and equilibrium constants from cell potential data for oxidation/reduction reactions4) 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
Required Texts & Materials	<i>Chemistry: Matter and Its Changes, 4th Edition</i> by James E. Brady and Fred Senese
Suggested Texts, Readings, & Materials	<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	Th 16-Aug	12	Intermolecular Forces
2	Tu 21-Aug		
3	Th 23-Aug		
4	Tu 28-Aug	20	Thermodynamics
5	Th 30-Aug		
6	Tu 4-Sep		
7	Th 6-Sep	Exam 1	
8	Tu 11-Sep	14	Solutions
9	Th 13-Sep		
10	Tu 18-Sep		
11	Th 20-Sep	16	Chemical Equilibrium
12	Tu 25-Sep		
13	Th 27-Sep		
14	Tu 2-Oct	Exam 2	
15	Th 4-Oct	17	Acids and Bases
16	Tu 9-Oct		
17	Th 11-Oct		
18	Tu 16-Oct	18	Acid and base Equilibria
19	Th 18-Oct		
20	Tu 23-Oct		
21	Th 25-Oct	Exam 3	
22	Tu 30-Oct	19.1-19.3	Solubility
23	Th 1-Nov	21	Electrochemistry
24	Tu 6-Nov		
25	Th 8-Nov		
26	Tu 13-Nov	15	Kinetics
27	Th 15-Nov		
28	Tu 20-Nov	Exam 4	
29	Th 29-Nov	Final Exam	8:00 am – 10:45 am

Course Policies

<p style="text-align: center;">Grading (credit) Criteria</p>	<p><i>Course Evaluation:</i></p> <table style="margin-left: 40px;"> <tr> <td>(i) Quizzes</td> <td style="text-align: right;">10%</td> </tr> <tr> <td>(ii) Class participation</td> <td style="text-align: right;">5%</td> </tr> <tr> <td>(ii) Exams (4 x 15%)</td> <td style="text-align: right;">60%</td> </tr> <tr> <td>(iii) Final Exam</td> <td style="text-align: right;">25%</td> </tr> </table> <p>(i) <i>Homework:</i> 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. 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.</p> <p>(ii) <i>Quizzes:</i> Quizzes will generally be over assigned homework problems and may be given online on WebCT or in class. Quizzes do NOT require that you bring a scantron. Most quiz dates will be announced in class at least one lecture prior to the quiz time. In addition to these scheduled quizzes we may have up to 4 “pop” (unscheduled) quizzes. Quiz 1 will cover the class syllabus in addition to Chapt 12. You must also recall the secret password, krypton, to receive full credit on Quiz 1. The lowest quiz score will be dropped in calculating your final average. There are no make-up quizzes.</p> <p>(iii) <i>In-class participation:</i> 5% of your grade will be determined by class participation. Students who ask questions, participate in class problem solving sessions, or regularly visit with the instructor to work on homework problems will receive more credit in this area than those who do not. From time to time class attendance will also be taken and credit will be given for those present. Graded work passed out in class and not picked up implies your absence. Bring your calculator to class for in-class problem solving sessions.</p> <p>(iv) <i>Exams:</i> ALL 4 EXAMS MUST BE TAKEN, at the scheduled time and on the scheduled day. There will be no makeup exams given. The lowest of the 4 hour exam scores can be replaced by your final exam score if your final exam score is higher than your lowest hour exam score. 10% will be taken off your exam score if your scantron is not properly filled out (see below). No electronic devices other than calculators are allowed in exams. Students may not wear hooded sweatshirts or jackets in exams.</p> <p><i>Missed Exam:</i> If you have an acceptable reason for missing an exam which can be <u>documented</u> (i.e., documented illness, auto accident, participation in UTD sponsored sporting event, observance of religious holiday) you will be allowed to drop the missed exam with no penalty. If you do not have an acceptable excuse for missing an exam a score of “zero” will be averaged into your exam grades.</p> <p>(v) <i>Bring:</i> 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 5 or more of them ahead of time. Before coming to class, bubble in the last six digits of your personal ID number (left justified) and write and bubble in your name. (3) A no. 2 pencil to be used</p>	(i) Quizzes	10%	(ii) Class participation	5%	(ii) Exams (4 x 15%)	60%	(iii) Final Exam	25%
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on all exam questions. Your scantron will not be fully graded if marks are not dark enough.

You may use any six digit number as a personal ID number (part of a telephone number, last six digits of your student ID number, social security number, etc.). As long as you use the same number each time your scantron graded score will go to you. It is very important, however, that you not use a number either longer or shorter than 6 digits. 5% will be taken off your exam score if your scantron is not properly filled out or marks are not dark enough to be graded.

Exam Format: Exam format will vary from exam to exam. Generally, however, there will be both short answer and multiple choice questions on an exam. 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, leaving questions #1 and #3 on the scantron blank. **DO NOT ANSWER SHORT ANSWER QUESTIONS ON THE BACK OF THE SCANTRON.** Short answer questions will be answered on the exam and both your exam and your scantron will be turned in for grading.

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 opportunity to mentally prepare yourself for the exam. After the exams are passed out, you will be given the remainder of the period to complete the exam. You may arrive late 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.

Grading errors: 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. **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.** It is your responsibility to make certain any grade changes made by the instructor are posted on WebCT. Errors found after this time will not be considered for more credit.

(vi) *Final Exam:* The final exam will be comprehensive and cannot be replaced by any other grade, so don't miss it. **The final exam cannot be dropped. No makeup final will be given.** Bring a scantron to the final exam. The final exam will be November 29th from 8:00 am – 10:45 am in SOM 1.212.

Make-up Quizzes & Exams	There are no make-up quizzes or exams (see above).
Extra Credit	There is no extra credit . However, you may obtain full credit by attending class and mentally being prepared to participate in class.
Computer	Relevant course material including lecture notes, exam keys, quiz keys, practice exams and homework solutions will be posted at <u>WebCT</u> . All quiz and exam grades will also be posted. You may log onto the WebCT site through Galaxy using your UTD assigned net ID and password. If you still have trouble logging onto WebCT write to webct@utdallas.edu or speak with your instructor.
Class Attendance	Your attendance and class participation will have an impact on your final grade. Taking an active role in your learning will (guaranteed) help you perform better. <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.
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, <i>A to Z Guide</i> , 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 <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, 972/883-6391). 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.
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. 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. 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

	<p>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>
Email Use	<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 http://netid.utdallas.edu/ and set up mail forwarding.</p>
Withdrawal from Class	<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>
Student Grievance Procedures	<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 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>
Incomplete Grades	<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 F.</p>
Disability Services	<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>The contact information for the Office of Disability Services is:</p>

	<p>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>
<p>Religious Holy Days</p>	<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 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.</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] 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.</p>

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