CHEMISTRY 101

Fall 2005 Sections 565-576

Lecture: Tuesdays & Thursdays
(11:10 a.m. to 12:25 p.m. Heldenfels Room 100)

Laboratory: (Once a week in rooms on the 4th floor of Heldenfels)

Instructor: Dr. Michael Shatruk

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Welcome to CHEM 101! As the science that describes matter and changes it undergoes, chemistry is central to our understanding of many fields, from health and medicine to agriculture and environment to engineering and evaluation of materials. Knowledge of chemistry is an important ingredient in a liberal arts education and an essential foundation for a technical education. Check with your advisor if you have any doubts concerning the suitability of this course to your degree.

Chemistry 101 and 102 are the first-year chemistry sequence in the core curriculum. Because chemistry is important to many fields, this is a very large course at Texas A&M. Although the large enrollment does place certain limitations on us, we in the First Year Chemistry Program are committed to providing you an interesting and stimulating course. To this end, the lecture and laboratory are together in one 4-credit course. We try to make ourselves approachable both in and outside the classroom. There will be *teaching assistants* available most hours of the day in Room 116 HELD to answer both lab and lecture questions. My office hours are discussed below.

Sections 565-576 of CHEM 101 represent a group of sections within a much larger program. Each grouping of sections is independent of the groups led by other instructors although we strive to cover common content, etc.

Information related to sections 565–576 of CHEM 101 can be found on the web. I plan to have this syllabus, lecture notes, sample problems, homeworks, course announcements, etc., on the web. The course's web pages can be accessed through the First Year Chemistry Program's homepage (www.chem.tamu.edu/class/fyp/fypintro.html) or by going directly to http://www.chem.tamu.edu/class/fyp/shatruk.

I will strive to make this course a meaningful and enjoyable experience for you. My goal is to make this class interesting for you and give you the necessary knowledge. I also would like to see each of you getting a high grade. A part of my teaching philosophy is to treat each student individually and try to offer the students as much help as possible from my side in order for them to succeed. Please feel free to call upon me whenever I can be of assistance. If I'm not around you can always reach me by e-mail. I will be available in Room 407 HELD during office hours to answer both laboratory and lecture questions.

Please let me know which of our efforts are most (or least) helpful.

Required Materials:

1) "General Chemistry", Whitten, Davis, Peck and Stanley, 7th Edition, 2004.
2) "Experiences in Chemistry – I, 3rd Edition", L. Peck and V. Williamson, 2006.
3) Lab notebook (8 1/2" x 11" duplicate "no carbon paper required", perforated pages).
4) Web Access Code for entry into OWL (On-line Web-based Learning), Brooks/Cole–Thomson Learning Inc.
5) In lecture during the **second week** of class all students are to turn in **FOUR** unmarked standard (8 1/2" x 11") gray scanning sheets (**Form No. 0-101607-TAMU**) along with the form that we will provide. Students who do not turn them in during lecture may pick up a form at the **Help Desk** room (see the section on **Help Desk**), fill it out and bring the form and scanning sheets to Held 412.
6) Approved Eye Protection. University and Departmental Regulations require that splash-proof, chemical goggles be worn by everyone present any time any experimentation is being conducted or any time chemicals or equipment are being moved by anyone in the laboratory. [The Graduate Chemistry Fraternity will be at the labs the first week of lab to sell suitable goggles at $5 (cash or checks)]. Failure to wear goggles will result in expulsion from the laboratory for the experiment involved. If you forget, you will be able to rent them at the Stockroom window for $4 with AggieBucks or for $10 through SIMS - so don't forget them! It would be a costly mistake!
7) Calculator suitable for use on lecture exams. May not have multi-line screen nor extensive memory. (See later discussion.)

Optional Materials:

1) "Student Solutions Manual, General Chemistry", 7th Edition, Y. Tang and W. Keeney-Kennicutt, 2004.
2) Laboratory apron or a nonflammable lab coat. An apron or lab coat will be required in laboratory if your shorts or skirt do not cover your knees.
3) "ChemSkill Builder", version 6 (or newer), James D. Spain.

Lecture Attendance: Even though I'm not going too check attendance, all students are required to attend the lectures in their registered section. During the lectures I will work many sample problems similar to those which you will later encounter at exams. Commitment to attend each class will help you to succeed in this course.

Lecture Reading Assignments: Lectures are intended to help you develop an understanding of material assigned from the textbook. To get the most out of lecture, one should always read the appropriate sections in the textbook before they are discussed in class. The lecture topics are shown in the calendar that appears later in this handout. I expect to see your commitment for regular study (starting the first day of classes!). I realize that this is not the only class you are taking this semester but you should devote 6-10 hours per week for reading and problem solving, preferably some time every day. We move fast in this course and you are lost if you miss earlier steps.

Lecture Homework Assignments: Homework problems will be assigned from the textbook and from On-line Web Learning (OWL). The textbook problems will be for practice but may be similar to those on exams. There will be a total of 8 homework assignments. Details on how OWL will be used as homework assignments will be distributed separately at another time. Each set of homework will be worth 10 points for a total of 80 for the semester. Homework must be submitted on time for it to be counted.

Percentage of problems correctly completed	<40 %	40 – 49%	50 – 59%	60 – 69%	70 – 79%	80-89%	>90 %
Number of points	0	1	3	5	7	9	10

Quizzes: There will be 6 lecture quizzes – they, however, will be administered in the beginning of your labs – and your 5 best scores will be counted. Your score on the quizzes that are counted will contribute a maximum of 30 points to your total lecture score. There also will be 3 lab quizzes (see the lab syllabus).

Exams: There will be three Lecture Exams (Exams 1, 2 and 3) given on the days indicated in the attached calendar. These are in addition to the FINAL EXAM and MAKE-UP EXAMS. All the exams may have a combination of multiple-choice questions that will be machine-graded and non-multiple choice questions that will be hand-graded. I will give a review session before each exam.

(A) **Lecture Exams:** These are 45-minute exams given during the regular lecture times. Each exam is worth 100 points. Exam 1 will cover material through Chapter 4 of the textbook, exam 2 – Chapters 5 through 7, and exam 3 – Chapters 8 through 11. Exams 2 and 3, however, may also include one or more review questions. **You must bring your student ID to each exam.**

(B) **Final Lecture Exam:** The Final Exam in the lecture portion of this course will be a 110 minute, 390 point exam that may test on any materials covered during the semester. The scheduled time for the Final Exam is Friday, Dec. 9 from 3:00 to 5:00 p.m. **You must bring your student ID to the Final Exam.**

(C) **Make-up Exams:** For students who have excused absences and who also notify me (the instructor) within 4 days of the missed exam, a make-up test will be arranged. Notification can be given in personal or by a short e-mail message. The make-up exams will be at least as difficult as the regular exams.

Lecture Exam Administration:

(A) Check your exam seating assignment one day in advance. **Each exam will have a different seating assignment.** Seating assignments will be posted on the bulletin boards outside of Room 100 at least 24 hours in advance of the exam.

(B) Arrive at the lecture exam on time. Cheating or bringing in material with intent to cheat will result in a zero for the exam or a more severe penalty. Do not bring unauthorized materials into the exam.

(C) Bring at least two #2 pencils, an eraser, and your TAMU ID card to the lecture exam. Pencil sharpeners and calculators (with certain restrictions - see (E) below) may also be brought to the exam. There must be no "sharing" of calculators during an exam. Any other questionable items must be out of sight in a briefcase, pack, purse, or sack, and stored under your desk or, if not in a closed container, you must place them at the front or back of the room before you take your assigned seat.

(D) Students can **NOT** use calculators that are programmable or have alphanumeric capabilities. Some of the acceptable and unacceptable calculators are listed on the bulletin boards. **Any student attempting to use an unacceptable calculator will receive a zero for the exam.**

(E) Follow the directions given to you as you enter the exam room. **Do not write on the envelope or on the back of the scantron sheet. Failure to follow these directions may result in a withheld or zero grade.** Note: Only answers recorded on the standard gray scantron sheet or other designated sheets will be graded.

(F) During the exam, keep all work covered as much as possible. Talking or looking around the room will result in a withheld grade for the exam.

(G) Work carefully, but you must finish in the allotted time; exams handed in late will not be accepted. Please remain seated quietly until asked to leave.

Review Schedule: An SI (Supplemental Instruction) leader will be assigned to these sections of CHEM 101 and will hold 2 or 3 review sessions per week. Mark Young (your IA) will conduct one review session every week. In addition to the regular IA and SI sessions, I will conduct Review Sessions before each exam. They are currently scheduled on 9/18 (Sun.) at 5:15-7:15 p.m., 10/16 (Sun.) at 5:15-7:15 p.m., 11/13 (Sun) at 5:15-7:15 p.m., and 12/7 (Wed.) at 5:15-8:00 p.m. Each of these will be in Room 100 of Heldenfels. Other review sessions may be arranged for other dates and times. Times and rooms for review sessions are subject to change.

Final Lecture Exam Schedule: Our final lecture exam is scheduled for Friay, Dec. 9 from 3:00 to 5:00 p.m. in Room 100 Heldenfels. Please do not expect to take the final exam at any time other than its scheduled time.

Grade Calculation: Grades will be calculated on the basis of total points earned.

LECTURE POINTS POSSIBLE:	
Homework	80
Exams (3 @ 100 points each)	300
Quizzes (best 5 @ 6 points each)	30
Comprehensive Final	390
Total of Lecture Points	800
LABORATORY POINTS POSSIBLE: (Lab score will have been adjusted so that the max. possible = 200 points.	
Total of Lab Points	200

Course Point Totals = (Total of Lecture Points) + (Total Lab Score) = 1000 possible.

Likely Grades (The range of each letter grade will be assigned at the end of the semester.) Approximate grade ranges will be:

870 (87%) and greater points = an A,
870 to 730 points (87-73%) = a B,
730 to 600 points (73-60%) = a C,
600 to 500 points (60-50%) = a D,
fewer than 500 points (50%) = an F

Incomplete Grades: Students with absences (excused or non-excused) who miss one or more exams without making up the missed exams should consult me. In particular, students who request a grade of "I" (Incomplete) and meet all university criteria for this temporary grade, must review the records, etc., with me before I will consider giving the grade of "I".

Office Hours: Office hours will be held from 8:00 to 11:00 a.m. each Thursday in Room 407 HELD. I will warn you in advance if any circumstances make me miss some office hours.

Help Desk (Room 116 HELD): The Help Desk hours are Monday through Friday, 9:30-12:30PM; Monday through Thursday, 1:30-4:30PM; and Friday, 1:30-2:30 PM. Check outside of this room for the exact schedule. This is where you would go to obtain the forms needed to request a copy of the exam scanning sheet if you think there was a grading error or to reserve special exam seating. For special seating requests you will need to obtain a form from Room 116, fill it out, and turn in to Held 412. These requests of special seating for exams must be submitted at least two weeks before each exam.

Bulletin Boards: Special announcements (schedule changes, etc.) will be posted on the official bulletin boards (Rooms 100, 413, and 117) and on the web site.

World Wide Web (http://www.chem.tamu.edu/class/fyp/shatruk)
Included are (1) announcements; (2) lecture notes; (3) sample problems; (4) information on lab sections; (5) course calendar. I'll keep the web-site updated regularly. Please, do tell me if you find any bugs, broken links, etc.

Dishonesty: Students are expected to be the sole source for any work submitted in their name. The utilization or submission of work of others is a violation of Texas A&M University scholastic dishonesty policies and disciplinary steps will be taken. Only authorized electronic or printed materials or equipment may be used in or near the classroom. As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research and knowledge cannot be safely communicated. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section "Scholastic Dishonesty".

Aggie Honor Code: "An Aggie does not lie, cheat, or steal or tolerate those who do."
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students may be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

Copyright: The handouts used in this course are copyrighted. By "handouts," I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, lab problems or study sheets, in-class materials, review sheets, and additional problem sets, notes, etc. Because these materials are copyrighted, you do not have the right to copy the handouts unless I expressly grant permission.

Texas A&M Support Services for Students with Disabilities (845-1637):
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, either temporary (e.g. broken arm) or permanent (including a learning disability), please contact the Department of Student Affairs, Disability Services located at Cain Hall (Room 118) or by suing the web at http://disability.tamu.edu. If you have any questions, see me.

Important Dates:

Sept.	**2:**	Last day to add/drop a course with no record.
Sept.	**2:**	Beginning of Q drop.
Sept.	**22:**	Lecture Exam #1.
Oct.	**14:**	Midsemester Grades Due in Chemistry Department
Oct.	**18:**	Lecture Exam #2.
Nov.	**4:**	Last day to Q drop a course.
Nov.	**18:**	Bonfire 1999 Remembrance Day. Classes will be held
Nov.	**17:**	Lecture Exam #3.
Nov.	**24-25:**	Holiday - Thanksgiving
Dec.	**2:**	Course Evaluations
Dec.	**5:**	Re-defined Day (FRIDAY CLASSES)
Dec.	**6:**	Re-defined Day (THURSDAY CLASSES)
Dec.	**7-8:**	Reading Days (No Classes)
Dec.	**9:**	Final Lecture Exam for Sections 565-576 is from 3:00-5:00 p.m. in Room 100 Heldenfels.

Laboratory Absences: Excused laboratory absences must be reported to your lab teaching assistant (TA) in a timely manner with a written excuse. A makeup quiz will be given the day of the lab final for those with an excused absence. There are two ways to make up a lab. **1)** If you miss one of the labs early in the week and can attend a later lab of ours the same week, contact me immediately, so I can arrange for you to attend the later lab **the same week**. **2**) If you have an excused absence for a lab, obtain a **MAKE-UP LABORATORY REPORT FORM** from Held 412 (or me), fill out the top half of the form, have your TA (or me) sign it and turn it in to Held 412. You will then be able to attend the regularly scheduled Make-up Lab at 6:00 PM Thursday of the week **following** the missed lab.

CHEM 101 Sections 565-576 FALL 2005

Lecture Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8/28	8/29	8/30 Introduction **Chapter 1** The Foundations of Chemistry	8/31	9/1 **Chapter 2** Chemical Formulas and Compounds Stoichiometry	9/2	9/3
9/4	9/5	9/6 **Chapter 3** Chemical Equations and Reaction Stoichiometry	9/7	9/8 **Chapter 3** Chemical Equations and Reaction Stoichiometry	9/9	9/10
9/11	9/12	9/13 **Chapter 4** Some Types of Chemical Reacitons	9/14	9/15 **Chapter 5** The Structure of Atoms	9/16	9/17
9/18 **Review Session** 5:15 p.m.	9/19	9/20 **Chapter 5** The Structure of Atoms	9/21	**9/22** **EXAM #1**	9/23	9/24
9/25	9/26	9/27 **Chapter 6** Chemical Periodicity	9/28	9/29 **Chapter 6** Chemical Periodicity	9/30	10/1

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
10/2	10/3	10/4 **Chapter 7** Chemical Bonding	10/5	10/6 **Chapter 7** Chemical Bonding	10/7	10/8
10/9	10/10	10/11 **Chapter 8** Molecular Structure and Covalent Bonding Theory	10/12	10/13 **Chapter 8** Molecular Structure and Covalent Bonding Theory	10/14	10/15
10/16 **Review Session** 5:15 p.m.	10/17	**10/18** **EXAM #2**	10/19	10/20 **Chapter 9** Molecular Orbitals in Chemical Bonding	10/21	10/22
10/23	10/24	10/25 **Chapter 10** Reactions in Aqueous Solutions: Acids, Bases, and Salts	10/26	10/27 **Chapter 10** Reactions in Aqueous Solutions: Acids, Bases, and Salts	10/28	10/29
10/30	10/31	11/1 **Chapter 11** Reactions in Aqueous Solutions: Calculations	11/2	11/3 **Chapter 11** Reactions in Aqueous Solutions: Calculations	*11/4* *Last Day for Q-dropping*	11/5

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
11/6	11/7	11/8 **Chapter 12** Gases and the Kinetic-Molecular Theory	11/9	11/10 **Chapter 12** Gases and the Kinetic-Molecular Theory	11/11	11/12
11/13 **Review Session** 5:15 p.m.	11/14	11/15 **Chapter 12** Gases and the Kinetic-Molecular Theory	11/16	**11/17** **EXAM #3**	11/18	11/19
11/20	11/21	11/22 **Chapter 13** Liquids and Solids	11/23	11/24 **Thanksgiving**	11/25	11/26
11/27	11/28	11/29 **Chapter 13** Liquids and Solids	11/30	12/1 **Chapter 14** Solutions	12/2	12/3
12/4	12/5	12/6 **Chapter 14** Solutions	12/7 **Review Session** 5:15 p.m.	12/8 *Reading Day*	**12/9** **FINAL EXAM**	12/10