

FALL, 2009
COURSE INFORMATION SHEET
Blinn College – Bryan Campus
General Chemistry I
CHEM 1411 – Section A8

Fall 2009 MW 4:15-6:55PM

INSTRUCTOR: Michael Golladay
OFFICE: S117 **PHONE:** 209-7571 **E-MAIL:** michael.golladay@blinn.edu
OFFICE HOURS: MW 3:15-4:00 PM, TTH 10:30-11:15AM, or by appointment

Course Description:

CHEM 1411 consists of the study of fundamental laws, theories and concepts of chemistry including quantitative relationships involving mass and energy, the structure and properties of matter and the chemical and physical changes it undergoes as well as the study of solutions. The laboratory component involves the application of the basic techniques and methods of chemical experimentation. Three class hours and three laboratory hours per week. Credit: Four semester hours.

Prerequisites:

Two years of high school algebra with grades of “C” or better and/or concurrent enrollment in MATH 1314.

Core Curriculum Course:

This is a course in the 42-hour Core Curriculum of Blinn College. As such, students will develop proficiency in appropriate intellectual competencies, exemplary educational objectives and general perspectives. The URL of the Blinn College core curriculum website is: www.blinn.edu/corecurriculum/index.htm

Course Objectives:

Upon completion of this course, the student will gain an understanding of the materials listed in the course description and should be able to analyze, evaluate, think and solve problems related to the course topics. The student will learn the basic approach to solve scientific problems as well as the safe handling and disposal of chemicals.

Student Learning Outcomes:

After completing this course, the student will:

1. Name, identify, and classify inorganic chemicals.
2. Convert between mass, number of moles, and number of particles of a substance.
3. Balance chemical equations and use the balanced equation to determine limiting reagent, theoretical yield, and percent yield.
4. Use the atomic model to define the electron configuration of an atom and properties given its position in the periodic table.
5. Given a covalent compound, draw the Lewis structures for that compound and from that predict the type of hybrid orbitals, the molecular shape, the polarity of the compound, and whether resonance occurs.
6. Identify substances as acids, bases, or salts and use stoichiometry to determine molarity in acid-base titrations.
7. Use the concepts of an ideal gas to determine changes in conditions, density, molecular weight, and partial pressures.
8. Compare and contrast the properties of gases, liquids, and solids; and interpret a diagram of the phases of a pure substance to define phase changes and key points (critical point and triple point).
9. Identify the intermolecular forces of attraction for various substances and correlate these forces

with the physical properties of various substances.

10. Calculate an approximate heat of reaction from the bond energies of the reactants and products; and correlate bond energy with bond order and bond length for cases involving the same two atoms.
11. Correlate the signs of enthalpy and entropy with the heat and order changes in a reaction.
12. Calculate heat involved in a reaction given the heats of formation and use the heat in stoichiometry calculations.

Textbooks and Other Materials:

Lecture: *Chemistry*, 5th Edition, by McMurray and Fay, Pearson/Prentiss Hall Publishing.

Lab Manual: *General Chemistry 1411 Laboratory Manual*, by Clement, Cache House Publishing.

Laboratory Notebook: *The Official Laboratory Research Notebook*, Jones and Bartlett Publishing, or any consecutively numbered (sets) carbonless copy notebook will work. These are available in bookstores around the area.

Safety goggles: Students are responsible for purchasing appropriate eye protection and wearing eye protection during laboratory sessions. Appropriate eye protection will be:

- 1) safety goggles (required for contact lenses)
- 2) OSHA approved safety glasses

Supplies: You will also need a simple scientific calculator. You cannot use your cell phone as your calculator in this course. The calculator can not be programmable nor can it have graphic capabilities. You will not be able to use programmable calculators for the Final Exam (this includes the TI-83 and similar calculators). It would be wise to work the exams with the same calculator that you will use for the Final Exam. You will also need to wear enclosed footwear (closed toed shoes) and pants that extend at least to your knees.

Grading:

The distribution of total points toward the final grade in this class will be as follows:

4 Major Exams	=	400 points
Lab Reports	=	250 points
Homework	=	100 points
Quizzes	=	50 points
<u>Lecture Final Exam</u>	=	<u>200 points</u>
Total	=	1000 points

The grading system of Blinn College recognizes the following grade values:

A=90-100% mastery of material
B=80-89%
C= 70-79%
D= 60-69%
F=*less than 59%*

COURSE OPERATING PROCEDURE

- Chemistry 1411 covers chapters 1-10, and 18 of the text plus additional material presented in the lecture.
- This is a 4 credit hour course. Completion of both the lecture and the lab is required to receive a single grade for 4 credit hours of work.
- Attendance is mandatory for successful completion of the class. Attendance will be taken to comply with financial aid requirements and Blinn College attendance policy.
- Cell phones are to be turned off for both the lecture and the lab.
- All students are given an email account at registration. I will use this account to communicate with you

as needed. Get in the habit of checking this account regularly.

- There will be 4 major exams that may consist of both multiple choice and short answer questions.
- The final is cumulative and entirely objective.

1. Lecture: Lecture will be from 4:15-5:30PM in S113. During the time devoted to lecture, the most difficult sections of a reading assignment will be emphasized. Questions relevant to the material under discussion will be accepted at any time during the lecture period. A short amount of time will be allocated to answering questions and solving problems. I do not provide copies of missed notes to students; therefore, if you miss class you will need to make arrangements with another student to get the notes.

2. Laboratory: The lab will be held from 5:40-6:55PM in S228. The lab work consists of selected experiments which are integrated with the material being presented in the lecture portion of class. The laboratory portion of the class counts for 25% of the total course grade. **There are no provisions for making up a missed lab; a missed lab will result in a zero grade** unless accompanied by a valid excuse (see Make-up policy below). Labs may be done in partners; which means groups of no more than 2. Each group must complete all of the assigned procedures and every person will submit their own report. Absolutely no eating or drinking will be allowed in the lab. Students **MUST** bring their eye protection to each lab. Students will not be allowed in the lab with open-toed shoes. If a student comes to lab without safety glasses, with open toed shoes, or inappropriate dress, they will be asked to leave and will receive a zero grade for that lab. **Please Note: You will be dismissed from the laboratory if you fail to follow safety procedures, fail to wear protective eye wear at all times, wear sandals or other open toed footwear to lab, or wear clothing inappropriate for the laboratory.**

The lab grade has 3 components: the Pre-Lab, the Data/ Report section, and the Post-Lab. For a 25 point Lab score, 5 points are allotted to the Pre-Lab, 5 points to the Post-Lab, and 15 points are allotted to the Data/Report section. The Pre-Lab must be turned in at the start of the lecture period of the day of the experiment to receive credit. A copy of your data must be turned in before you leave the lab the day of the experiment. The Report and the Post-Lab must be turned in on the next class day after the after the lab is completed. Reports turned later than the next class meetings after the experiment will not be graded. **Note that the total lab grade is 25% of the overall grade in this course.**

3. Quizzes: There will be several short quizzes given during the semester covering material from the lecture and laboratory. They will generally be given at the start of lecture period and take less than 5 minutes. Some may be unannounced. They will be worth 10 points each. When given, quizzes will serve as the attendance indicator for that day. There will be no make up for missed quizzes.

4. Homework: Work, outside of the classroom, is expected. For any college level science course, time outside of the classroom/laboratory must be spent in order to master the material and do well in the class. Therefore, I will assign problems from the end of the chapters to give you practice with the course content. All homework assignments involve the interactive tutoring online homework program "Mastering General Chemistry". You must purchase an **account password** as soon as possible and **login to begin**. The results from your online assignments will count 100 points toward your final grade. Homework will be graded based on the following criteria:

- a. homework is turned in on time;
- b. assignment is complete;
- c. answers are correct.

If you fail to submit your homework, you will receive a grade of zero. Failure to do the required homework can **cost you one letter grade.**

Mastering General Chemistry coaches students on problem-solving techniques. You should expect to spend a significant amount of the time on homework. You have 6 trials for each problem, except for True/False and

Multiple Choice questions for which you have only one trial. At the end of semester, your access to homework would be cut off by the system. Homework collection and grading will be handled by the system. Instructions are given at the website: www.masteringchemistry.com. **The course ID for this section is MCGOLLADAY47764.**

5. Help: It is easy to fall behind and become overwhelmed by the work. Students should make every attempt to keep up and stay current with the instruction in the lecture. Every student should feel free to schedule an appointment for help. There are also free tutors and computerized tutorials available in the Learning Center.

BLINN CLASS POLICIES:

Attendance: Blinn College believes that class attendance is essential for student success; therefore, students are required to promptly and regularly attend all of their classes. Each class meeting builds the foundation for subsequent class meetings. Without full participation and regular class attendance, students shall find themselves at a severe disadvantage for achieving success in the class. Class participation shall constitute at least ten percent of the final course grade. It is the responsibility of each faculty member, in consultation with the division chair, to determine how participation is achieved in his or her class. Faculty will require students to regularly attend class and will keep a record of attendance from the first day of class and/or the first day the student's name appears on the roster through final examinations. If the student accumulates four days worth of absences (two weeks), he/she will be administratively withdrawn from class.

There are four forms of excused absence officially designated by Blinn College:

1. Observance of religious holy days: The student should notify his/her instructor(s) not later than the 15th day of the semester concerning the specific date(s) that the student will be absent for any religious holy day(s);
2. Representing Blinn College at an official institutional function;
3. Official involvement in a high school activity for "dual credit" students; and
4. Military service.

Other excuses will be considered and may be considered excusable at the instructor's discretion, with appropriate documentation. Missing lecture or lab or both will count as one absence. You will be dropped after 4 absences. Students are expected to be present the entire class time to be considered present. Attendance may be recorded in the first five minutes of class, both lecture and lab, in the form of a quiz or a roll call. Any student not present during the recording of attendance will be recorded absent, regardless of how much of the remaining time the student is present. If you miss class for any reason, you must contact me by e-mail to provide notice of your absence and to receive any instructions missed during the class. Failure to notify me will result in an unexcused absence for that class period.

Dropping:

If a student chooses to drop the course, it is that student's responsibility to complete a drop order at the Office of Admissions and Records. Failure to do so could result in a grade of F in the course. **November 20th is the last day to drop with a W.**

Eating and drinking:

Eating and drinking is not allowed in classrooms or laboratories.

Dishonesty Statement:

Blinn College does not tolerate cheating, plagiarism or other acts of dishonesty. Definitions of these acts and procedures for dealing with them are described in "Scholastic Dishonesty" in the Blinn College Student Handbook, copies of which are available on-line and at the information desk in the administration building.

Civility Statement

Members of the Blinn College Community, which includes faculty, staff, and students, are expected to act honestly and responsibly in all aspects of campus life. Blinn College holds all members accountable for their actions and words. Therefore, all members should commit themselves to behave in a manner that recognizes personal respect and demonstrates concern for the personal dignity, rights, and freedoms of every member of the College community, including respect for College property and the physical and intellectual property of others. Civility applies to attire as well as language and behavior. Please dress appropriately for the academic classroom and laboratory.

If a student is asked to leave the classroom because of uncivil behavior, the student may not return to that class until he or she arranges a conference with the instructor. It is the student's responsibility to arrange for this conference.

ADA Statement:

Students with physical or learning disabilities must present documentation from the Office of Disability Services (room 165, Science Bldg.) to receive accommodation on exams and assignments. Accommodation is not retroactive.

<u>Date:</u>	<u>Lecture:</u> (S113)	<u>Assignment</u>	<u>Lab:</u> (S228)	<u>Assignment</u>
Aug 31 Sep 2	Introduction Chapter 1	Chap 1 Hmwk	Introduction Experiment 1	Postlab 1 Due
Sep 7 Sep 9	Chapter 2 Chapter 2	Chap 2 Hmwk	Experiment 2 Recitation	Prelab 2 Due Postlab 2 Due
Sep 14 Sep 16	Chapter 3 Chapter 3	Chap 3 Hmwk	Experiment 3 Exam 1 Review	Prelab 3 Due Postlab 3 Due
Sep 21 Sep 23	EXAM 1 Chapter 4	Chap 1,2,3 Due Chap 4 Hmwk	Experiment 4 Experiment 4	Prelab 4 Due
Sep 28 Sep 30	Chapter 4 Chapter 5	Chap 5 Hmwk	Recitation Experiment 5	Postlab 4 Due Prelab 5 Due
Oct 5 Oct 7	Chapter 5 EXAM 2	Chap 4&5 Due	Exam 2 Review Experiment 6	Postlab 5 Due Prelab 6 Due
Oct 12 Oct 14	Chapter 6 Chapter 6	Chap 6 Hmwk	Recitation Experiment 7	Postlab 6 Due Prelab 7 Due
Oct 19 Oct 21	Chapter 6 Chapter 7	Chap 7 Hmwk	Experiment 7 Recitation	Postlab 7 Due
Oct 26 Oct 28	Chapter 7 Chapter 7		Experiment 10 Exam 3 Review	Prelab 10 Due Postlab 10 Due
Nov 2 Nov 4	EXAM 3 Chapter 8	Chap 6&7 Due Chap 8 Hmwk	Experiment 8 Recitation	Prelab 8 Due Postlab 8 Due
Nov 9 Nov 11	Chapter 8 Chapter 9	Chap 9 Hmwk	Experiment 11 Recitation	Prelab 11 Due Postlab 11 Due
Nov 16 Nov 18	Chapter 9 Chapter 10	Chap 10 Hmwk	Experiment 12 Recitation	Prelab 12 Due Postlab 12 Due
Nov 23 Nov 25	Chapter 10 Holiday		Exam 4 Review	
Nov 30 Dec 2	EXAM 4 Chapter 18	Chap 8,9,10 Due	Experiment 9 Recitation	Prelab 9 Due Postlab 9 Due
Dec 7 Dec 9	Chapter 18 Final Exam Review		Final Exam Review Final Exam Review	
Dec 12	FINAL EXAM	9:00 – 11:00 AM	Blinn CPC, Rooms TBA	