

FALL, 2009
COURSE INFORMATION SHEET
Blinn College – Bryan Campus

General Chemistry I
CHEM 1411 – Section C5

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Office Hours: TR 2.50 am – 3.50 pm or by appointment
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Course ID: NITROGEN (to enroll for “MasteringChemistry”)

Course Description:

General Chemistry I is the first half of a two-semester sequence. It 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.

Prerequisites:

Two years of high school algebra with grades of “C” or better 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 web site is:

www.blinncol.edu/corecurriculum.htm

Course Objectives and Student Learning Outcomes:

Upon completion of the course, the student will have an overall average of at least 60% of the combined lecture and laboratory components of the course. This includes at least 3 to 4 major exams and chapter/weekly quizzes given at the discretion of the Instructor. In the laboratory the student successfully complete the experiments with the accompanying reports. The student will demonstrate in the laboratory an understanding of the experiment through analysis of data and being able to use this data to solve problems and predict the outcome of similar reactions and/or experiments.

After completing this course, the student should be able to:

- Apply the methods and understand the meaning of chemistry
- Make use of scientific notation and understand the use of significant figures
- Demonstrate a knowledge of chemical symbols and formulas and balance chemical equations
- Name and identify inorganic compounds
- Distinguish between ionic and covalent compounds
- Predict the physical and chemical properties of the elements by using the periodic table
- Calculate the number of particles in a given number of moles of a substance
- Determine the mass corresponding to a given number of moles of a substance
- Describe the Bohr and the modern quantum model of the atom
- Describe the electron configurations of the elements and their influence on the chemical and physical properties of the elements in relation to position in the periodic chart
- Determine the theoretical yield from the masses of the reactants in a chemical reaction

- Apply the concept of limiting reagent in chemical reactions
- Calculate the percentage yield of a chemical reaction
- Calculate the specific heats of substances
- Correlate bond energy with bond order and bond length
- Draw accurate Lewis structures for compounds
- Predict resonance from Valence Bond Theory
- Use electronegativities to predict the degree and direction of polarity in a bond
- Describe the formation of a coordinate covalent bond
- Apply Molecular Orbital Theory to explain the bonding in an oxygen molecule
- Predict the shape and polarity of a molecule by applying Valence Shell Electron Pair Repulsion Theory
- Correlate the type of hybrid orbitals described in Valence Bond Theory with the geometries of molecules
- Determine the molecular structures of some common nonmetals
- Balance oxidation-reduction reactions
- Distinguish between Arrhenius, Bronsted-Lowry, and Lewis acids and bases.
- Identify strong acids and bases and predict the acidity or basicity of their salts
- Compare the properties of liquids, gases, and solids
- Describe how real gases differ in behavior from ideal gases
- Solve problems involving the expansion or contraction of gases
- Identify intermolecular forces of attraction and correlate these with the physical properties of a substance
- Describe and distinguish between crystal types and crystal unit cell packing
- Interpret phase diagrams for pure substances
- Differentiate colloids from suspensions and solutions
- Define and use mole fraction in calculations
- Calculate boiling point elevation and freezing point depressions
- Define osmosis and calculate osmotic pressure

From the laboratory work the student should be able to:

- Handle chemicals safely and dispose of the properly
- Locate and use MSDS sheets and understand the information they provide
- Use a Bunsen burner
- Determine densities, pH, and temperature (including specific heat) of materials
- Perform chemical reactions and interpret the results
- Determine the empirical and molecular formulas of compounds experimentally
- Perform acid/base and Redox titrations
- Identify unknown compounds bases upon their chemical and physical properties

Textbooks and Other Materials:

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

Lab Manual: <http://www.blinn.edu/brazos/natscience/ChemResources.htm> or you may purchase from the University Copy Center.

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

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 need **goggles or appropriate safety glasses** for use in the laboratory. You will also need to wear **enclosed footwear** (closed toed shoes). In addition, you will need to wear pants that extend at least to your knees, so, no shorts that are above the knee. You will be dismissed from the laboratory if you fail to follow safety procedures, wear protective eye wear at all times, or wear sandals or other open toed footwear to lab and appropriate clothing.

Description of Course Content and Class Schedule:

This course will cover chapters 1 through 10 and 18 in the text.

Tentative Exam Schedule:

Exam	Date	Chapters covered
1	Sep 24	1, 2, 3
2	Oct 20	4, 5
3	Nov 17	6, 7, 8
4	Dec 8	9, 10, 18

Final	May 9	Comprehensive

Final Exam: Saturday, Dec 12th 9-11 am, in the CPC (room to be announced).

All exams are closed book exams. No notes may be used on the exams. All necessary information will be supplied. During exams there are some special rules to insure fairness. If you must leave the room for any reason, you must turn in your exam. Please visit the restroom, if required, before you receive your exam. Usually you will be expected to place any personal belongings such as books and backpacks against the wall and away from your desk. Using your cell phone is not allowed.

NOTE: The prelabs have to be turned in at the beginning of the first part of class

Important dates for Fall 2009

September 4th	last day to add/change classes
September 15th	12 th day of class official census day
November 20th	Last day to drop with "W"
November 25-27th	Thanks Giving
December 12th	Final Exam

The lab grade has 3 components: the Pre-Lab, the Data/ Report section, and the Post-Lab. For a 25 point Lab score 7 points are allotted to the Pre-Lab, 8 points to the Post-Lab, and 5 points are allotted to the Data/Report section. 30 points for lab quizzes, at the end of the semester 20 points for keeping a good lab note book. **IF YOU COPY THE LAB REPORT FROM THE OTHER EITHER PARTIES OR ALL INVOLVED GET ZERO GRADE.**

The Pre-Lab must be turned in at the start of the lecture period of the day of the experiment to receive any points. 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 second class day after the after the lab is completed. Points will be deducted from Reports and Post-Labs turned in late. Reports turned later than 2 class meetings after the experiment will not be graded. **Note that the total lab grade is 25% of the over all grade.**

Homework is a requirement. There will be 10 graded assignments due during the semester worth approximately 10 points each set (100 pts. *Maximum total*). In addition, an introductory assignment will be assigned. Homework will be graded based on the following criteria:

- Homework is turned in *on time*
- The assignment is *complete*

Homework collection and grading will be handled by MasteringChemistry, an online homework system.

Lab Safety: STUDENTS ARE RESPONSIBLE FOR PURCHASING APPROPRIATE EYE PROTECTION AND WEARING EYE PROTECTION DURING LAB. APPROPRIATE EYE PROTECTION WILL BE

- 1. SAFETY GOGGLES (REQUIRED FOR CONTACT LENSES)**
- 2. OSHA APPROVED SAFETY GLASSES WITH SIDE SHIELDS**

Please note that only safety goggles give reasonable protection in all laboratory situations. Covering the forehead or hair with goggles does not count as eye protection. It is mandatory that the shoes or boots worn to lab cover the feet and toes. It is mandatory to wear clothing cover the skin neck to below knees or wear a lab coat. If the goggles are taken off during lab or inappropriate footwear is worn, the student will be asked to leave. Do not forget to wear appropriate footwear (see attendance policy), it will be checked at the beginning of lab.

Course Requirements:

Quizzes: Unannounced quizzes will be given. It will not be possible to offer makeup quizzes for those that are missed because the quizzes are an extension of lecture discussion and are a continuation of the dialog between instructor and student.

Student E-Mails

Students are assigned an E-mail address that must be checked regularly for official Blinn communications and course information. The address is of the form: Firstname.LastnameLast2digitsBlinnID@buc.blinn.edu . Information about accessing this account can be found at: www.blinn.edu/acadtech/studentemail/

Blinn Class Policies:

Attendance: The College District believes that class attendance is essential for student success; therefore, students are required to promptly and regularly attend all 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 college. 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 a student has one week's worth of absences during the semester, he/she will be sent an e-mail by the College requiring the student to contact his/her instructor and schedule a conference immediately to discuss his/her attendance issues. If the student subsequently accumulates two weeks worth of absences, he/she will be administratively withdrawn from class.

There are three 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 and (3) official involvement in a high school activity for "dual credit" students. Other excuses will be considered and may be considered excusable at the instructor's discretion, with documentation.

Missing lecture or lab or both will count as one absence. You will be dropped for 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.

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. **Nov. 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 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.

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.

Laboratory Conduct:

The students work in teams (*two students per one team*). In no case will you allowed to work in a group consisting of more than 3 students. Students are responsible for **purchasing appropriate eye protection:** safety goggles (required for contact lenses), or OSHA approved safety glasses with side shields). The students must wear **approved eye protection and closed toed shoes** in the lab. **Failure to do so will result in expulsion from the laboratory** for the performed experiment and will automatically result in grade zero for this lab. The students are expected to practice safe lab procedures and to **clean up the working lab area and equipment** before leaving the lab. Failure to clean up your lab area and equipment will result in loss of points (50%).

Exam Procedures

During exams there are some special rules to insure fairness. If you must leave the room for any reason, you must turn in your exam. Please visit the restroom, if required, before you receive your exam. Usually you will be expected to place any personal belongings such as books, and backpacks against the wall and away from your desk. Using your cell phone is not allowed. Programmable calculators are not allowed.

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.

Criteria for Grading:

Grading will be based on a point system as follows:

Four Major Exams	100 points each (400 total)
Quizzes	50 points
Laboratory Work	250 points
Homework	100 points
Comprehensive Final	200 points
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%	“

YOUR GRADE IS YOUR RESPONSIBILITY!!!

Division of Natural Science - Class Policies

1.

Blinn College students are expected to dress following generally accepted community standards of neatness, cleanliness, modesty and good taste. This policy is interpreted to require students to wear shoes in all buildings other than residence halls and campus apartments. Elasticized, form-fitting, athletic-type apparel is not acceptable in the classrooms, labs, library or dining hall. Outer garments should cover underwear garments. Apparel with suggestive or obscene writing and/or indecent graphics may not be worn in any public area of the campus including, but not limited to, the classrooms, labs, etc.

2.

Cell phones are not allowed in the lecture or lab period. Cell phones should be set to silent or off before entering into the class.

3.

If a student is late he or she should enter the class in such a way that does not disrupt the class.

4.

If a student has question he or she should raise their hand and wait to be called on to ask it.

5.

Student should never begin an experiment until they are told to do so;

6.

Students should never remove their goggles from the eyes in the lab until they advise to remove them.

7.

Students are expected to attend both lecture and lab on time, late arrivals may count as absences.

8.

Failure to adhere the rules could result the student being asked to leave the class room or laboratory room due to uncivil behavior as per the civility protocol. Failure to leave the classroom after being asked to leave will result in the student being physically removed by the Blinn college PD.

**Tentative Lecture and Lab Schedule
Fall 2009
Section C5**

	TH(H207)	TH(S218)
Date	12.00 – 1.15 PM	1.25 – 2.40 PM
1-Sep	Introduction	Safety training/Pretest
3-Sep	Ch 1	Exp 1
8-Sep	Ch 1, 2	Exp 2
10-Sep	Ch 2	Exp 2, Quiz 1
15-Sep	Ch 2, 3	Exp 3, Postlab E-2
17-Sep	Ch 3	Exp 3, Quiz 2
22-Sep	Ch 3	Review
24-Sep	EXAM 1	Lab Quiz – Exp 1, 2, 3
29-Sep	Ch 4	Exp 6
1-Oct	Ch 4	Exp 6, Quiz 3
6-Oct	Ch 4	Exp 10
8-Oct	Ch 5	Exp 10
13-Oct	Ch 5, Quiz 4	Exp 7
15-Oct	Review	Exp 7, Review Cont
20-Oct	EXAM 2	Lab Quiz – Exp 6, 7, 10
22-Oct	Ch 6	Exp 8, Postlab E-7
27-Oct	Ch 6	Exp 9, Postlab E-8
29-Oct	Ch 7	Exp 9 – Labreport, Quiz 5
3-Nov	Ch 7	Exp 11
5-Nov	Ch 7, 8	Exp 11-Labreport, Quiz 6, Ch 8
10-Nov	Ch 8	Ch 8
12-Nov	Review	Review
17-Nov	EXAM 3	Lab Quiz – Exp 8, 9, 11
19-Nov	Ch 9	Exp 12
24-Nov	Ch 9	Exp 12 lab report, Quiz 7
26-Nov	Ch 9/10	Ch 10
1-Dec	Ch 10	Ch 18
3-Dec	Ch 18	Review
8-Dec	EXAM 4	LAB FINALS
10-Dec	Review	Review
12-Dec	FINALS	

Assigned Laboratory Experiments

1. Review of basic mathematics
2. Density of solids and liquids
3. Gravimetric determination of the water of hydration of Epsom salt
6. Relative reactivity of metals and the activity series
10. Lewis dot structure, hybridization, and shapes of molecules and ion.
7. Preparation of common alum
8. Acid-base titration: Determination of the concentration of an unknown acid solution
9. Oxidation-Reduction titration
11. Hess law and heat of neutralization
12. Determination of mass of magnesium metal in a sample

Student E-mail Accounts

Blinn College is partnered with Microsoft Windows Live @ Edu to provide e-mail accounts to future, current and former Blinn students.

Each student is provided with an account once their application is complete.

You can log into [BORIS](#) to see your Blinn e-mail account.

■ To start using your account go to: <http://mail.live.com>

■ Your account is *Firstname.LastnameLast2digitsBlinnID@buc.blinn.edu*

■ Your initial password is *your student ID number*

[First Time login step-by-step instructions](#)

What can I do with this account:

Receive official communications from Blinn College
Send/Receive e-mail to friends, fellow students, faculty and staff
Store 1 GB of documents on SkyDrive in Spaces
Share information with blogs, web pages, lists and photos in Spaces
Forward this e-mail account or check multiple e-mail accounts
Customize [MyMSN](#) to include e-mail and other content relevant to you

**E-mail account does not expire and the Inbox remains active as long as you log in at least once every 120 days.
To reactivate a dormant account, just log in.**