1211B – Principles of Chemistry I (Fall 2013)
Course Syllabus (Professor Duncan)

Instructor:	Dr. Dean C. Duncan
Office:	3082 Bailey Science Center (3rd floor)
Contact Info:	Office Phone: (229)-333-7391; E-mail: dcduncan@valdosta.edu
Office Hours:	M 11AM-12PM; T 12:15PM-1:15PM; F 11AM-12PM; or by appointment (request *via* e-mail)
Lecture Time:	T/R 11:00 AM to 12:15 PM (Room 1011, Bailey Science Center)
Supplementary Instruction	Raymond Fontanez (Instructor; rgfontanez@valdosta.edu): T 5:00PM-6:30PM; R 4:30PM-6:00PM Dr. Duncan: F 2:00PM-3:30PM

Course Objectives

Chemistry 1211 is the first semester of a two-semester course sequence (1211/ 1212) that is designed to provide students with a broad overview of chemistry. Each student should expect to improve her/his knowledge of chemistry and to develop improved qualitative and quantitative problem-solving skills. Chemistry 1211 introduces a quantitative study of the physical and chemical behavior of matter in its several phases and considers modern theories of bonding at the atomic/molecular level. Chemical nomenclature, atomic and molecular structure, stoichiometry, thermochemistry, the gaseous, liquid, and solid states, and properties of solutions are discussed.

Outcomes (Departmental criteria)

Upon completing this course the student will be able to

- determine the moles and masses of substances consumed or produced in a chemical reaction by using a balanced chemical equation.
- given a chemical formula,
  - predict whether the substance is molecular or not
  - predict its molecular structure and electronic charge distribution
  - describe the nature of its chemical bonding using modern bonding theories
  - identify the dominant intermolecular force and understand how this relates to the existence of solid, liquid, and gas phases
- determine the number of protons, neutrons and electrons in an atom or ion using the periodic table.
- identify changes in physical and chemical properties of the element by using the periodic table.
- predict the products of fundamental metathesis and oxidation-reduction reactions.
- calculate the enthalpy change of a reaction using thermodynamic tables.
- name inorganic compounds using IUPAC rules.

Integrated Assignment Outcome (Freshman Learning Community)

- recognize the generality of applying algebraic concepts to solving practical problems.

Course Content and Prerequisites

Content: chemical equations, stoichiometry, thermochemistry, electronic structure of atoms, periodic trends, molecular bonding and structure, intermolecular forces, and properties of gases, liquids, solids, and solutions.

Prerequisites: A mathematics SAT score of 540 or higher, a mathematics ACT score of 23 or higher, a passing score on the Chemistry Department placement exam, or CHEM 1200 with a grade of "C" or higher; additionally, MATH 1111 or MATH 1113 is prerequisite or co-requisite and CHEM 1211L is a co-requisite.

Course Materials

Chemistry: The Central Science, 12th Ed. By Brown *et. al.* ISBN-10: 0-321-69672-7 or ISBN-13: 978-0-321-69672-4 (cloth cover)	~ $247	(required textbook)
MasteringChemistry Access Code ISBN-13: 978-0-321-70504-4	~ $66	(required software)
Solutions To Red Exercises by Wilson & Brown ISBN-10: 0-321-70548-3	~ $74	(optional)

Alternative bundled packages:

Chemistry: The Central Science with MasteringChemistry®, 12th Ed. ISBN-10: 0-321-74105-6 or ISBN-13: 978-0-321-74105-9 (cloth cover)	*~ $258*
Chemistry: The Central Science, Books a la Carte + MasteringChemistry®, 12th Ed ISBN-10: 0-321-78756-0 or ISBN-13: 978-0-321-78756-9 (loose leaf pages, 3-hole punch)	*~ $187*

MasteringChemistry® with Pearson eText for Chemistry: The Central Science, 12th Edition ~ $110
ISBN-13: 978-0-321-70508-2 (lowest cost option; no text hardcopy – ebook only)

Purchase at the VSU Bookstore or go to the publisher (Pearson) website
http://www.mypearsonstore.com/bookstore/product.asp?isbn=0321741056&xid=PSED

Other Alternative Textbook Sources:

Amazon: http://www.amazon.com/Chemistry-Central-Science-MasteringChemistry-Package/dp/0321741056
has *Chemistry: The Central Science with MasteringChemistry®, 12th Ed.* *~ $157*
ISBN-10: 0-321-74105-6 or ISBN-13: 978-0-321-74105-9 (cloth cover)

On-line Rentals?? *e.g.* Chegg:
http://www.chegg.com/textbooks/chemistry-12th-edition-9780321696724-0321696727?trackid=91b7e8fc&ii=2
can rent *Chemistry: The Central Science with MasteringChemistry®, 12th Ed.* *~ $64/semester*
ISBN-10: 0-321-74105-6 or ISBN-13: 978-0-321-74105-9 (cloth cover) but no guarantee you get the MasteringChemistry access key code! If you plan to take 1212 next semester, you will need to rent it again.

Note: Buying the textbook, either in hardcover or loose-leaf format, also enables access to the e-book.

You also will need a **non-programmable/non-graphing basic scientific calculator** (*e.g.* TI-30 series). Only this type of calculator will be allowed for use during examinations – NO EXCEPTIONS. If you are unsure about the suitability of your calculator, you should let me see it BEFORE the first scheduled exam.

Course Website (*BLAZEVIEW*)

Chem 1211 - BLAZEVIEW website URL is: https://vsu.view.usg.edu/

Use your Student ID and password to login to *Blazeview*. This website includes a link to the *MasteringChemistry* (homework) website. Lecture notes, practice exams, course announcements, grades, and other info will be posted on *BLAZEVIEW*, so you are encouraged to check *BLAZEVIEW* frequently during the semester.

Online Homework

MasteringChemistry® is an Internet-based software package that helps improve problem-solving skills and concept understanding. Twenty-percent of your course grade will be based on your *MasteringChemistry* scores. *MasteringChemistry* is described more completely on the Chem 1211 *BLAZEVIEW* website. Each of the 13 chapters has a *MasteringChemistry* Assignment. The Chapter 1 score is discarded; the final homework score is based on the 10 best of the remaining 12 scores. Chapter scores of 90% or above will be adjusted to 100% at the end of the semester as a means to correct for deficiencies that MAY be encountered with *MasteringChemistry* (no on-line homework system is perfect).

Examinations

There are four 75-minute unit exams and a 2-hour cumulative American Chemical Society standardized final exam. The exam format is multiple choice. Failure to take a regularly scheduled exam will result in an exam grade of zero unless the student submits a request, which meets my approval for taking a make-up exam (see make-up exam procedures below). The final exam must be taken in order to pass the class (no exceptions). Students should bring a #2 pencil, their University ID, and a basic scientific calculator, such as a TI30X or TI30Xa, to each exam. Graphing calculators, programmable calculators, or data transmitting devices (e.g., PDA, laptop, cell phone) will not be allowed in the examination room.

Exam #1:	Tuesday,	Sep 3 - Chaps 1, 2, and 3
Exam #2:	Thursday,	Sep 26 - Chaps 4, 5, and 10
Exam #3:	Tuesday,	Oct 29 - Chaps 6, 7, 8, and 9
Exam #4:	Thursday,	Nov 21 – Chaps 11, 12, and 13
Final Exam:	Friday,	Dec 6, 10:15 AM – 12:15 PM - Chaps 1-13

The final exam is a national standardized exam provided by the American Chemical Society. **Exams will not be re-scheduled to accommodate holiday or other travel plans** unless those plans were made prior to receipt of this syllabus (documented proof is needed).

Make-Up Examinations

Students who miss a regularly scheduled exam may request to take a make-up exam ONLY if the reason for missing the exam fits at least one of the following circumstances: (1) The scheduled exam conflicts with participation in a VSU athletic competition or performing arts event. In this case, the student must contact me no later than 1 week before the scheduled exam date to reschedule the exam. (2) A student is unable to take the

exam because of either serious illness or circumstances beyond their control. In this case, an excused absence form with supporting documentation must be filled out and submitted to me within 1 week after the scheduled exam. The excused absence form is available on the Blazeview website. It is expected that the make-up exam will be taken within 1 week from the scheduled exam date.

Make-up exams will not be given to accommodate holiday/travel plans or any extracurricular activities except for those made prior to Aug. 13 and for which supporting documentation exists.

Grading

Semester grades will be based on four 75-minute unit exams, a 2-hour nationally-standardized American Chemical Society final exam, and homework.

Scored components

Unit Exams	= 60%
Final Exam	= 20%
MasteringChemistry homework	= 20%
Total	= 100%

Letter grades on unit exams are assessed from a standard set of "core-competency" questions that place minimum qualifications for meeting course objectives. Typically, this set of questions will range from 55-70% of the total unit exam points. Students scoring in this range will be considered average with a letter grade of C. Students that accumulate point totals ≤ 2/3 of the "core-competency" baseline will be considered failing with a letter grade of F. From this baseline standard, assessment of the remaining letter grades will be done by calculating the class PercentRank, which measures a student's relative standing in the class (*e.g.* a student might rank 15th out of a class of 183 students). Only those students that are not failing are taken into account in the calculation. By using this measure, the top 15% within this set of students will earn an A, the next 34% will earn a B, the next 40% will earn a C, and the last 11% will earn a D.

Supplemental Resources for Instruction

Three optional classes will be held each week that focus on problem-solving skills and provide an additional forum for answering questions. The Tuesday/Thursday sessions will be guided by Raymond Fontanez – a former CHEM 1211 student – and Prof. Duncan will hold the Friday session. Additionally, an exam review session also will be held during the week in which a unit exam is given. The tentative dates and times of these supplemental instructional periods are given at the end of this document. Any changes in this tentative schedule will be announced in class and/or posted on Blazeview. Attendance during these sessions is optional; however, they may improve your performance on exams.

The Student Success Center (SSC) provides free peer tutoring in core courses, the top four of which are Math, Writing, Spanish, and Biology/Chemistry. It also offers time management and study skills workshops as well as providing for free professional academic advising and on-campus job information in one location: Langdale Residence Hall. Help is available to all VSU students. Call 333-7570 to make an appointment, or visit the website: www.valdosta.edu/ssc.

Classroom Policies and Procedures

- **Attendance**
  Regular attendance to lecture is expected and is necessary in order to be successful in this class; however, regular attendance is not compulsory.
- **Electronic Communication**
  VSU guidelines dictate that all VSU-related correspondence should be conducted *via* VSU email addresses for both student and instructor. You are responsible for all official correspondences sent to your VSU e-mail address (@valdosta.edu).
- **Academic Misconduct**
  - Misconduct: The University academic misconduct policy is available in the *Student Code of Conduct section of the VSU Student Handbook*. Academic misconduct may result in grade reduction and/or other serious penalties, up to and including expulsion from the University.
  - Examinations: You are expected to work alone. Student answer sheets will be examined using statistical software that identifies students who copy answers on exams – cheating will not be tolerated. Those caught cheating will be given a zero on their exam and the incidence will be part of the student's

record on file with the Student Conduct Office in the Vice President of Student Affairs and Dean of Students.

- *MasteringChemistry* homework: For your ultimate benefit in terms of exam performance, you alone should complete your *MasteringChemistry* e-homework. Faculty office hours and the Student Success Center (SCC) are available to help you gain the needed understanding and problem-solving skills necessary to do the homework and to prepare for exams.

- **Student Classroom Behavior**
  The ability to learn is lessened when students engage in inappropriate classroom behavior, distracting others; such behavior is a violation of the Student Code of Conduct. When disruptive activity occurs, classroom-seating patterns may be altered or the offending student(s) may be required to exit the classroom immediately for the remainder of the period. All cell phones/pagers should be turned off (not vibrate-mode) during lecture and exams.

- **Special Needs**
  Any student with a disability that may require seating modifications or other accommodations should contact me so that appropriate arrangements may be made. Students with disabilities requiring modification of testing should first contact the Access Office for Students with Disabilities located in Farber Hall (front desk; 245-2498). Eligibility and other pertinent information is accessible from their website: http://www.valdosta.edu/access/

- **Complaints**
  Students with concerns about this course are encouraged first to contact me to discuss these issues. Complaints and appeals regarding this course can be filed with the Head of the Department of Chemistry administrative offices, Room 3025 BSC (333-5798).

- **Student Opinion of Instruction (SOI) Survey**
  At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available on BANNER. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators. Instructors will be able to view only a summary of all responses two weeks after they have submitted final grades. While instructors will not be able to view individual responses or to access any of the data until after final grade submission, they will be able to see which students have or have not completed their SOIs, and student compliance may be considered in the determination of the final course grade. These compliance and non-compliance reports will not be available once instructors are able to access the results. Complete information about the SOIs, including how to access the survey and a timetable for this term is available at http://www.valdosta.edu/academic/OnlineSOIPilotProject.shtml.

Good Practices

First, print out the lecture notes and skim-read the text on the upcoming lecture topic in your textbook before coming to lecture. Familiarize yourself with any terms, definitions, concepts, *etc.* BEFORE coming to class. Make note of passages in your text that are confusing and prepare a list of questions to ask during/after lecture if they are not addressed to your satisfaction during lecture. Asking questions during lecture is strongly encouraged. Following lecture, read the text in depth and make sure that you understand what you are reading, then begin doing the homework assignment. Second, manage your time wisely. The minimum expectation is 6 hours/week for this course; however, much more will be required if you wish to perform well (12-15 hours/week is typical). In addition to the assigned homework, you should do as many problems from the end of each chapter as you can in order to be adequately prepared for the examinations that constitute most of the points for this course (I will post a list of suggested additional problems on Blazeview). This means gaining not only familiarity with the types of problems that may be encountered on exams but to learn to do them quickly and efficiently under exam simulation conditions, *i.e.* book closed, not using any resources, *etc*. Third, do not get behind!! The pace of this course is quite rapid and the ability to comprehend new topics will require mastery of previously covered material. Should you get behind, it will be nearly impossible for you to do well in this class. Fourth, get assistance as soon as you identify the need. Do not put this off, as you will not have time to catch up. This issue is critically important, particularly in the early stages of the course, when a student still has time to resolve problems before “falling behind”. See me during my scheduled office hours or make an appointment if these are not amenable with your schedule (also see “Supplemental Resources for Instruction”).

- **Course Syllabus**

  The course syllabus is subject to modification as deemed necessary during the semester. Any such modifications will be announced in class and posted as an announcement in Blazeview. The syllabus version will be updated at the bottom of each page.

Tentative 1211 Lecture, Homework, and Exam Schedule (Fall 2013)

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Date	Day	Lectures and Exams
Aug 13	T	Chap 1- Matter and Measurement
15	R	Chap 1
20	T	Chap 2- Atoms, Molecules, and Ions
22	R	Chap 2
27	T	Chap 3- Reaction Stoichiometry
29	R	Chap 3
Sep 2	M	Labor Day (University Holiday)
3	T	**Exam #1 (Chaps. 1, 2, and 3)**
5	R	Chap 4- Aqueous Reactions
10	T	Chap 4
12	R	Chap 5- Thermochemistry
17	T	Chap 5
19	R	Chap 10- Gases
24	T	Chap 10
25	*W*	*Exam 2 Rev. Session, 7:30-9:00PM (TBA)*
26	R	**Exam #2 (Chaps. 4, 5, and 10)**
Oct 1	T	Chap 6- Electronic Structure of Atoms
3	R	Chap 6
3	R	PSS, Chap 6, 6:00-7:30 PM (TBA)
3	*R*	*Mid-Term: Course Withdrawal Deadline*
8	T	Chap 7- Periodic Properties
10	R	Chap 7
15	T	Chap 8- Basic Concepts of Bonding
17	R	Chap 8
22	T	Chap 9- Molecular Geometry and Bonding
24	R	Chap 9
28	M	*Exam 3 Rev. Session, 7:30-9:00PM (TBA)*
29	T	**Exam #3 (Chaps. 6, 7, 8, and 9)**
31	R	Chap 11- Intermolecular Forces
Nov 5	T	Chap 11-
7	R	Chap 12- Solids and Modern Materials
12	T	Chap 12
14	R	Chap 13- Properties of Solutions
19	T	Chap 13
20	W	*Exam 4 Rev. Session, 7:30-9:00PM (TBA)*
21	**R**	**Exam #4 (Chaps. 11, 12, and 13)**
25-29	M-F	Thanksgiving break
Dec 3	T	*Final Exam Review Session (TBA)*
6	**F**	**Comprehensive Final Exam, 10:15 AM - 12:15 PM**

MastChem Due Date

See MastChem website for due dates. Usually, but not always, a homework chapter will be due the first day of lecture a new chapter is covered. On the due date, the deadline for submitting your homework is 11:59 PM.

Supplementary Instruction

Venue to be announced
-Fontanez
T: 5:00-6:30; R: 4:30-6:00
-Duncan
F: 2:00-3:30