CHAMINADE UNIVERSITY
CH 203 GENERAL AND ANALYTICAL CHEMISTRY I
Fall Semester 2004

Section 03

TR 8:00-9:20 AM	**Instructor:**	G. David Lin
Henry Hall 33	**Office:**	Henry 6
	Phone:	739 8543
4th Hr TBA	**eMail:**	dlin@chaminade.edu
	Office Hours:	TR 9:30 -12:30, or by appointment

Required Materials: - textbook: Moor , Stanitski, Jurs, *Chemistry, The Molecular Science*, Thomson, Brooks/Cole, 2nd ed., 2005.
- scientific calculator

Optional Material: - Shakhashiri and Schreiner, *Workbook for General Chemistry*, Stipes Publishing, 2nd ed., 2000.

Course Description and Objectives:

CH 203 is the first half of a two semester, college-level, general chemistry course. The second semester is CH 204. This course will introduce the student to the fundamental concepts of chemistry with an emphasis on problem solving. CH 203/204 is suitable for students planning careers in science, medicine, engineering or other areas requiring a general chemistry course.

Upon successful completion of CH 203, the student should be able to:

- write chemical symbols for various elements on the periodic table
- identify the major subatomic particles
- write names and chemical formulas for various types of chemical compounds
- balance chemical equations
- perform stoichiometry calculations
- identify different types of aqueous chemical reactions
- calculate energy changes that occur during a chemical reaction
- identify the different atomic orbitals
- write electron configurations
- identify the type of bonding between atoms in a compound
- predict the shape of a given molecule

The main activities during class periods will be lecture/discussion and problem solving. Your calculator and writing materials should be brought to each class meeting.

Homework: Homework problems from each chapter will be assigned in class. They will not be collected for credit, but students are strongly urged to work them to help grasp the concepts covered in lecture. A solutions manual will be available in my office.

Worksheets and Quizzes: There will be eleven short, ten-point quizzes given this semester during the fourth hour of class. At the end of the semester, the lowest quiz score will be dropped before grades are calculated. There will also be several worksheets handed out this semester. You are encouraged to get whatever help you need to complete these assignments and turn them in on time.

Midterm Exams: There will be two midterm exams given this semester. Each will be worth 100 points and you will be responsible for all lecture material covered up to that point in the semester. The exam dates are indicated in the schedule below.

Final Exam: The final exam is scheduled for Monday, Dec. 6, from 10:30 to 12:30. This exam will be cumulative, covering all of the material presented in class over the semester.

Attendance: At the end of the semester I will award attendance points based on the number of unexcused absences for each student. Excused absences due to illness or family emergency will not affect your attendance points. If you miss a lecture, please send me an email or leave a phone message explaining your absence. **If you miss a midterm exam, a written explanation should be turned in or you will receive a score of zero. Any student who does not take the final exam will fail the course.**

Course Grades: The course grades will be based on the following point total and scale: Any changes will be announced in class.

- Attendance 20
- Worksheets 80
- Quizzes 100
- Midterm exams 200
- Final exam 200

600 total points

GRADE	TOTAL POINTS	PERCENTAGE
A	540-600	90-100 %
B	480-539	80-89 %
C	390-479	65-79 %
D	270-389	45-64 %
Fail	below 270	below 45 %

The violation of academic honesty as stated in the Chaminade University general catalog will result in a zero grade for the assignment and /or an “F” for the course. Serious violations could lead to suspension or dismissal from the University.

CH203 Section 03 Draft Time Table

Date	Topic
24-Aug	Course information, Pre-test
26-Aug	**Ch 1: The Nature of Chemistry** Properties of Matter
TBA	Atomic theory, Elements
31-Aug	**Ch 2: Atoms and Elements** Atomic structure
2-Sep	Atomic number, Atomic weights, Molar mass **Quiz #1**
TBA	Periodic table
7-Sep	**Ch 3: Chemical Compounds** Molecular formulas, Naming molecular compounds, Hydrocarbons **Quiz #2**
9-Sep	Ions and ionic compounds
TBA	Naming ionic compounds
14-Sep	Properties of ionic compounds, Mass-mole conversions **Quiz #3**
16-Sep	Percent composition
TBA	Biomolecules
21-Sep	**EXAM I**
23-Sep	**Ch 4: Quantities of Reactants and Products** Chemical equations
TBA	Stoichiometry
28-Sep	Limiting reagent calculations **Quiz #4**
30-Sep	Empirical formulas, Combustion analysis
TBA	**Ch 5: Chemical Reactions** Solubility rules, Precipitation reactions
5-Oct	Acid-base reactions, Oxidation numbers, Redox reactions **Quiz #5**
7-Oct	Solution concentration
TBA	Solution stoichiometry, Titrations **Quiz #6**
12-Oct	**Ch 6: Energy and Chemical Reactions** Conservation of energy, Heat capacity
14-Oct	Changes of state, Enthalpy
TBA	Energy changes in chemical reactions, Calorimetry **Quiz #7**
19-Oct	Hess's Law, Heats of formation
21-Oct	Chemical Fuels
TBA	**EXAM II**
26-Oct	**Ch 7: Electron Configurations and the Periodic Table** Electromagnetic radiation, photoelectric effect
28-Oct	Bohr model of the hydrogen atom
TBA	Quantum numbers, energy levels and orbitals **Quiz #8**
2-Nov	Atomic electron configurations
4-Nov	Periodic trends
5-Nov	**Ch 8: Covalent Bonding** Covalent bonds, Lewis structures **Quiz #9**
9-Nov	Bond length and bond energy
11-Nov	Electronegativity, Bond polarity, Formal charge
TBA	Exceptions to the octet rule, Resonance structures **Quiz #10**
16-Nov	Molecular orbital theory
18-Nov	**Ch 9: Molecular Structures** VSEPR theory, molecular geometry
TBA	Hybrid orbitals, Molecular polarity **Quiz #11**
23-Nov	Intermolecular forces
25-Nov	**Public holiday**
TBA	Biomolecules
30-Nov	Course evaluation, Problem session
2-Dec	Post-test
	Final Exam TBA