CHEMISTRY 1094 (S11), SPRING 2010

INSTRUCTOR INFORMATION

Instructor: **Dr. Roshan Cader**
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Office Hours: Tuesday: 01:00 - 02:00 pm,Thursday: 03:00 - 04:00 pm
[Monday/ Wednesday: 8:00 - 09:00 pm (Richmond Campus)]

GENERAL COURSE INFORMATION

Credits: 4, Non-transferable

Class Times: Tuesday/ Thursday: 04:00-05:50 pm (Room D336)

Prerequisites/ Corequisite: **Prerequisite:** Mathematics 10 (with C or better); **Corequisite:** Mathematics 11 (with C or better), **or** ACPM 0082 **or** MATH 1093 (or higher level).
N.B.: MATH 1093 or Math 11 is a prerequisite for CHEM 1105.

Instruction Format: Two lectures per week (two hours each) and one lab per week (two hours)

Required Material: Basic Chemistry – Zumdahl/DeCoste, Houghton Mifflin (2008), 6th edition. Chemistry 1094 Lab Manual (2009) , one Lab Notebook, a Lab Coat, Safety Glasses, Goggles or Side Shields (to be worn with regular glasses); Contact Lenses can not be worn in the laboratory. *All chemistry courses will require the **Sharp EL-531W calculator**, and its available from the Kwantlen Bookstore. This and the **Aurex SC-6136 calculator** (which was used in the past) are the only two calculators allowed.*

Supplementary Material: The Chemistry Department Web Pages contain **Lab Hand-in Sheets (select Surrey Campus Section!)**; *Supplemental Course Material; Problem Sets with Answers* and copies of past midterm and final exams. This material can be accessed at: ***www.kwantlen.ca/science/chemistry*** *or directly at my home page :* ***www.kwantlen.ca/science/chemistry/faculty/rcader/***

Optional: Complete Solutions Manual for Basic Chemistry 6th Ed, Houghton Mifflin(2008)

EVALUATION

Lecture (70%)		**Laboratory (30%)**	
Two Exams	30	**Lab Reports**	20
Quizzes	10	**Final Lab Exam**	10
Final Exam	30		

Attendance:

Students are expected to attend all lectures, tutorials and laboratory sessions. If you miss a lab for a legitimate reason (e.g. illness), please consult your lab instructor about a possible make-up lab. ***Make-up tests will not be available; if you miss a test for a legitimate reason, the value of the final exam will be increased accordingly. The Final Examination date is set for April 26, 2010. Do not make any travel plans during this period because you will not be allowed to take any Chemistry Finals earlier than scheduled.***

IMPORTANT DATES

Jan. 10 (Sunday)	Last day to add a course or to drop a course without a "W" appearing on your transcript
Feb. 11 (Thursday)	**Exam #1**
Feb. 15-27	Reading Break
March 13 (Saturday)	Last day to drop a course ("W" will appear on your transcript)
April 08 (Thursday)	**Exam #2**
April 19 (Monday)	Last day of scheduled classes (*note: Thursday April 15th last class for Chem. 1210/ S10*)
April 26 (Monday)	**Final Examination Day (Room: D 120, Time: 11:30 -02:30 pm)**

GRADE GUIDELINES

What follows are the guidelines used to determine your final grade in Chemistry 1094. Satisfactory completion of the laboratory portion of the course (i.e. an overall lab mark of 60% or better) is required to obtain a C or better grade.

Grade	Percent	Requirements
A+	90 - 100	Minimum of 80% on final exam
A	85 - 89	Minimum of 70% on final exam
A-	80 - 84	Minimum of 65% on final exam
B+	76 - 79	Minimum of 60% on final exam
B	72 - 75	Minimum of 60% on final exam
B-	68 - 71	Minimum of 55% on final exam
C+	64 - 67	Minimum of 50% on final exam
C	60 - 63	Minimum of 40% on final exam
C-	56 - 59	Minimum of 40% on final exam
D	50 - 55	Some work can be incomplete
F	<50	

CHEMISTRY 1094 COURSE OUTLINE AND SCHEDULE OF TOPICS

Text: **Basic Chemistry – Zumdahl/ DeCoste (6th Ed.)**

Chapter 1. Chemistry: An Introduction - Introduction to Chemistry, problem solving, the scientific method, learning Chemistry.

Chapter 2. Measurements and Calculations - scientific notation, SI units, measurements, uncertainty in measurement, significant figures, problem solving using dimensional analysis, temperature conversions, density.
Suggested End of Chapter Questions and Problems: 10, 12(a-d), 14(a-f), 38, 42, 44, 54, 56, 64(a-c), 78, 80, 82, 96, 98, 110.
Supplemental Problem Set: Measurement Problem Set (Omit questions 14, 15, 19 & 20 for now).
Supplemental Exercises: Graphing Exercise; Dimensional Analysis Practice.
Supplemental Work sheets(optional): Math; Measurement.

Chapter 10. Energy (Sections 10.1 - 10.5) - nature of energy, temperature and heat, exothermic and endothermic processes, energy and its units, heat capacity and specific heat, measuring energy changes..
Suggested End of Chapter Questions and Problems: 14, 26, 28, 32, 34, 38.
Supplemental Problem Set: Measurement Problem Set (Questions 14, 15, 19 & 20).

Chapter 3. Matter - matter, physical and chemical properties and changes, elements and compounds, mixtures and pure substances, separation of mixtures.
Suggested Questions and Problems: 12, 14, 18(a-e), 20, 24, 30, 32, 38, 40, 44, 52, 54, 56, 58.

Chapter 4 and Supplement. Chemical Foundations: Elements, Atoms, and Ions - the elements, symbols for the elements, Dalton's atomic theory, formulas of compounds, atomic structure, isotopes, periodic table, natural states of the elements, ions, ionic compounds.
Suggested Questions and Problems: 10, 20(a-d), 24, 28, 32, 34, 36, 38, 40, 42, 44, 46, 48, 52, 54, 60, 64, 68, 74, 76, 84, 98.
Supplemental Problem Sets: Atoms, atomic weight, isotopes & ions Problem Set.
Supplemental Course Material: Atomic Mass Supplement; Molecular and Ionic Compounds.

Chapter 5. Nomenclature - naming compounds, naming acids, writing formulas from names.
Suggested Questions and Problems: 12, 14, 20, 22, 28, 30, 34, 36, 40, 42, 44, 70, 78.
Supplemental Problem Set: Naming Problem Set.
Supplemental Course Material: Molecular and Ionic Compounds.

Chapter 6. Chemical Reactions: An Introduction - evidence of a chemical reaction, chemical equations, writing & balancing chemical equations.
Suggested Questions and Problems: 38(a-e), 40(a-e), 44(a-e), 74(a-e).

Chapter 7. Reactions in Aqueous Solutions - predicting whether a reaction will occur, types of reactions including: precipitation, acid-base, and oxidation-reduction, classification of reactions. Suggested Questions and Problems: 12(a-e), 16, 18, 22(also write the net ionic equations), 26, 46, 54(e-i), 75.
Supplemental Problem Set: Reactions Problem Set
Supplemental Material: Classification of Reactions.

Chapter 8. Chemical Composition – counting by weighing, molecular weight and formula weight, molar mass, mole concept, mass percentage, determining formulas.
Suggested Questions and Problems: 20(a-d), 24(a-e), 40, 56, 62, 66.
Supplemental Problem Sets: Moles Problem Set; Empirical Formula Problem Set.
Supplemental Work sheets: Moles; Formulas.

Chapter 9 and Supplement. Chemical Quantities - information given by chemical equations, stoichiometry of a chemical reaction, limiting reagents, percent yield, percent purity (Supplement).
Suggested Questions and Problems: 12, 14, 22(a-e), 28, 46, 48, 50, 62,
Supplemental Problem Sets: Stoichiometry Problem Set (Omit questions 10 & 11 for now).
Supplemental Work sheets: Stoichiometry.

Chapter 15. Solutions (Sections 15.1 to 15.7)- solution Composition: mass percent and molarity, dilution, stoichiometry of solution reactions, volumetric analysis(acid-base reactions).
Suggested Questions and Problems: 16(a), 18(a), 20, 22, 36(a), 42, 50(a), 56(a), 58, 64, 74(a).
Supplemental Problem Set: Solutions Problem Set.
Supplemental Work sheets: Solutions.

Basic Thermochemical Stoichiometry - Lecture Notes. Endothermic and exothermic reactions., determining quantities of heat required or produced from a chemical reaction.
Supplemental Problem Sets: Stoichiometry Problem Set Questions 10 & 11.

Chapter 13. Gases (**ONLY IF TIME PERMITS**) - Properties of gases, gas laws, gas stoichiometry. (***Problems will be assigned, if covered***)

Kwantlen Poly. University Policy on Plagiarism and Cheating (Policy C.8)

Introduction

1. Definitions

Cheating, which includes plagiarism, occurs where a student or group of students uses or attempts to use, unauthorized aids, assistance, materials or methods. Cheating is a serious educational offense. Plagiarism occurs where a student represents the work or ideas of another person as his or her own.

Policy

Kwantlen University College condemns all forms of cheating. If it is determined that a student has cheated, the University College will proceed with discipline in the following manner:

1. For most first offences, a grade of zero will be awarded for the affected assignment, test, paper, analysis, etc.;

2. For most second offences, a failing grade will be assigned in the affected course;

3. Depending upon the circumstances surrounding a first or second offense, a more severe level of discipline may be imposed by the University College;

4. Where deemed appropriate in the circumstances, for any third offence, the matter must be referred to the University College Vice President Learner Support under Policy No. C.21 Student Conduct for the assignment of discipline, which may include suspension or expulsion from the University College.

5. Any student who contributes to an act of academic dishonesty by another student may face disciplinary action. This policy must be communicated in all Course Presentations.

Procedural Guidelines

1. When an instructor or invigilator believes that a student has cheated (which includes intent to cheat), the student will be asked for an explanation of the events that led the instructor or invigilator to make the allegation. If after hearing the explanation, the instructor or invigilator still believes that the student has cheated, the instructor or invigilator will gather all available evidence and inform the Dean in writing. Documentation should include, but is not limited or restricted to, a clear description of the offence (the date when the incident occurred or was detected, the course number and section, the student's name and number); evidence (cheat notes, plagiarized samples, photocopies of, or actual, unpermitted aids or materials, etc.) as applicable; and names and phone numbers of witnesses, if applicable. It should be sent to the Dean within 10 days of the incident or discovery, unless there are problems contacting the student. The instructor or invigilator will inform the student of her/his decision regarding the assignment of a grade to the affected work and that the documentation will be forwarded to the appropriate Dean.

2. The Dean, upon (and only upon) receipt of the written information from the instructor or invigilator, will assign any additional disciplinary action which may be in order under the policy described above, and will inform the Registrar.

3. The Registrar will maintain a record of each offence in the student's file.

4. The affected student has the right at any time to consult with a University College counsellor and/or the student ombudsperson.

5. Except in circumstances where the matter has been referred to the President under Policy No. C.21 Student Conduct, a student may appeal a decision or penalty under this policy to the Kwantlen University Appeals Committee (L.6 Appeals of Academic Decisions).

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