KWANTLEN POLYTECHNIC UNIVERSITY

ENVI 1106

Fall 2010

Instructor:	Dr. Patrick Duffy Office 3345 (Richmond Campus), Phone: 599-2550 Email: patrick.duffy@kwantlen.ca Web: www.kwantlen.ca/faculty/pduffy
Office Hours:	Mondays 10 – 11, Tuesdays 2 – 3, and Fridays 12 – 1 (all in the Richmond Learning Centre)
Credits:	4
Prerequisites:	Chemistry 11 (with C+ or higher) or Chemistry 12 (with C- or P or better) or CHEM 1094; and Mathematics 11 (with C or higher) or MATH 1093 (or higher level)
Transferable:	See KPU Calendar for transfer details
Instruction format:	Classroom work (4 hours/week) and Labs (3 hours/week)

Required materials:

- *General Chemistry,* Darrell D. Ebbing and Steven D. Gammon Houghton Mifflin, 2009.
- ENVI 1106/1206 Laboratory Manual (2010)
- Either the Aurex SC-6136 or the Sharp EL-531W calculator
- Lab coat, safety glasses, and a laboratory notebook. *Contact lenses are not permitted in the lab.*

Course Policies:

If you have taken ENVI 1106 before, you may be eligible for a lab exemption. Talk with me *before the first scheduled lab* to verify whether you are exempted or not.

If you are unable to take a quiz or test, you must contact me before the quiz or test is scheduled to start. If I am unavailable, please leave a voice mail message or send an email, including a phone number where you can be reached. A medical certificate (dated the day of the absence) or other relevant documentation will be required upon your return to school. When said documentation is provided, the weights of the other term tests will be adjusted so you will not be penalized for missing that test. If you must miss a lab, contact your lab instructor beforehand to indicate that you will miss the lab then, upon return to school, provide documentation to the lab instructor. More than three labs missed for *any* reason will result in a grade of incomplete being assigned for the laboratory portion of the course. Labs or tests missed for which documentation is not produced will be assigned a grade of *zero*.

Important Dates:

Last day to drop without a "W" on transcripts	September 13 (Monday)
Term test #1	***October 1 (Friday)***
Term test #2	***October 29 (Friday)***
Last day to officially withdraw (with W on transcript)	October 30 (Saturday)
Term test #3	***November 26 (Friday)***
Final ENVI 1106 lecture	December 10 (Friday)
Final exam period	December 15 – 23
ENVI 1106 Final Exam (Room 3450, 11:30 – 2:30)	***December 16 (Thursday)***

Evaluation:

Lecture course evaluation (70 %)

1. Three in-class tests during the semester 40 %
2. A final exam on the entire semester's work 30 %

Laboratory evaluation (30 %)

1. Lab reports (marks deducted for late labs) 18 %
2. Unknowns 4 %
3. Lab exam 8 %

Chemistry Grade Guidelines[1]:

The following guidelines will be used to determine the letter grades assigned in this Chemistry course. Completion of the laboratory part of this course means that all of the labs have been performed, and a satisfactory report was submitted for every experiment.

Grade	Percent	Requirements	
A+	90-100	Minimum of 80 % on final exam.	All work in the laboratory must be
A	85-89	Minimum of 70 % on final exam.	completed, and a mark of no less than
A-	80-84	Minimum of 65 % on final exam.	65 % must be obtained in the lab work.
B+	76-79	Minimum of 60 % on final exam.	All work in the laboratory must be
B	72-75	Minimum of 60 % on final exam.	completed, and a mark of no less than
B-	68-71	Minimum of 55 % on final exam.	60 % must be obtained in the lab work.
C+	64-67	Minimum of 50 % on final exam.	All work in the laboratory must be
C	60-63	Minimum of 40 % on final exam.	completed, and a mark of no less than
			50 % must be obtained in the lab work.
C-	56 - 59	Minimum of 40 % on final exam	Not applicable
D	50-55	Not applicable.	Not applicable.
F	<50	Not applicable.	Not applicable.

[1] A C or better grade is required for advancement to ENVI 1206.

ENVI 1106 Schedule of Topics

Chemistry and Measurement (Chapter 1) – Scientific method; Law of conservation of mass, classification of matter, properties of matter: physical versus chemical properties and changes; measurement and significant figures; SI base units; derived units, units and dimensional analysis.
Suggested problems: *all "blue" problems*

Atoms, Molecules and Ions (Chapter 2 except section 2.7) – Atomic theory, structure of the atom, isotopes, atomic mass, periodic table of the elements, chemical formulas: molecular and ionic substances, naming, writing and balancing chemical equations.
Suggested Problems: *26, all "blue" problems from 27 onwards*

Chemical reactions (Chapter 4, sections 4.1 – 4.6) – Ionic theory of solutions, solubility rules, molecular and ionic equations, precipitation reactions, acid-base reactions, oxidation-reduction reactions (identifying redox reactions, identifying oxidizing and reducing agents; determining oxidation numbers), balancing redox equations by the half-reaction method, molar concentration, diluting solutions, gravimetric analysis, volumetric analysis.
Suggested Problems: *"blue" problems from 23 – 65, 95 - 107, 135, 141*

Calculations with Chemical Formulas and Equations (Chapter 3) –Molecular mass and formula mass, the mole concept, mass percentages from the formula, elemental analysis, determining formulas, molar interpretation of a chemical reaction, amounts of substances in a chemical reaction, limiting reactant, theoretical and percentage yields.
Suggested Problems: *17, 18, 21, all "blue" problems from 25 onwards*

Calculations with Chemical Formulas and Equations (Chapter 4, sections 4.7 – 4.10) –Molar concentration, diluting solutions, gravimetric analysis, volumetric analysis.
Suggested Problems: *"blue" problems: 67 – 93, 109 – 133, 137, 139, 143 - 155*

The Gaseous State (Chapter 5, sections 5.1 – 5.5) –Gas pressure and its measurement; empirical gas laws; STP, ideal gas law, molar mass determination and gas densities, stoichiometry problems involving gas volumes; gas mixtures and the Law of Partial Pressures.
Suggested Problems: *27, "blue" problems: 29 – 87, 105 – 121, 129, 145 - 151*

Organic Chemistry (Chapter 23) – Structure and common/systematic nomenclature of organic compounds including skeletal, positional, geometric, and optical isomers and congeners, common reactions of alkanes, alkenes, alkynes, alkyl halides, ethers, amines, alcohols, acids, esters, aldehydes, and ketones, structure, nomenclature and environmental impact of common organic biohazards such as freons, dioxins, and PCBs
Suggested Problems: 1 – 5, 7, 9 – 12, 14 – 18, 26, 27, 29, odd-numberd problems from 33 – 71, 73 – 82

Kwantlen Polytechnic 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 Polytechnic University 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 Polytechnic University Appeals Committee (L.6 Appeals of Academic Decisions).

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