

John Abbott College

Environmental Science and Technology

General Information

Program:	Pathways, Transitions	Instructor:
Course Number:	982-003-50	Office:
Ponderation:	4-2-3	Telephone:
Prerequisite:	Sec. IV Science*	E-mail:
Semester:	Fall 2015	Office hours:

Lectures:

Labs (2 hours):

Introduction

This course is designed for those who have taken either *Secondary IV Science and Technology or Applied Science and Technology but have not completed either:

- Secondary IV Environmental Science and Technology, or
- Secondary IV Science and the Environment

Students passing this course can take Chemistry 001 or Physics 001 courses in the future.

Course Objectives

This course introduces physics, biology and chemistry, and follows the Quebec Science Guidelines. It covers the properties of matter, the periodic table, chemical changes and nuclear transformation, the laws of electricity and magnetism, transformations of energy and an introduction into genetics.

In keeping with the Quebec high school exit profile, students must demonstrate mastery of the following competency: *Analyze genetic phenomena, the behaviour of matter, and the transformation of energy by using scientific principles.* This will be achieved in this course by addressing the following elements:

- Explain the properties of matter based on its representations and the periodic table
- Solve problems involving chemical changes and nuclear transformations
- Solve problems by using the laws of electricity and electromagnetism
- Solve problems involving the transformation of energy
- Describe the characteristics related to genetics
- Verify, using the experimental approach, several scientific laws and principles

Evaluation Plan

3 unit tests	30%	(Approximately weeks 5, 10, 15)
Labs	25%	
Assignments and quizzes	15%	
Final exam	30%	(scheduled between Dec. 10-Dec. 21 th)

Please note:

- a) To pass the laboratory portion of the course, a minimum of 60% of the total laboratory grade must be obtained. Failing this, a laboratory grade of **zero** will be given and a maximum grade of 55 will be allowed for the course.
- b) If a student passes the laboratory portion of the course, a grade of 60% or more on the final exam will guarantee a pass in the course.
- c) If the final exam mark is greater than the average of the three unit tests, then the final exam mark replaces the average of the unit test marks, i.e., the final exam is then worth 60% of the total course grade.
- d) Late work will not be accepted without a valid reason.
- e) Students must be available to write their final exam during the period of December 10th-21th.

Course Content

Topics covered include:

- | | | |
|---|-------------------------|---|
| - significant figures | - atomic structure | - stoichiometry and chemical calculations |
| - scientific notation | - the periodic table | - nomenclature |
| - mole concept | - chemical bonding | - solutions |
| - chemical and physical changes | - chemical nomenclature | - radioactivity |
| - classification of matter | - chemical reactions | - electricity |
| - protein synthesis | - heredity | - magnetism |
| - heat, work, potential, kinetic energy | | - mass, weight |

Required Materials and Course Costs

- a) Calculator: scientific model required (non-programmable)
- b) Lab coat (about \$20 at the bookstore)
- c) Lab glasses – Good quality safety glasses are available from the bookstore (about \$10) or from most hardware stores.
- d) Textbook: Foundations of College Chemistry, 14th Ed. Hein/Arena.

Teaching Methods

Lectures: Two 2-hour lectures per week. There will be three unit tests, covering approximately one third of the course each. In addition, there will be quizzes and assignments throughout the term. Also, preparation for up-coming laboratory sessions will be discussed during lecture time.

Laboratory Sessions: 30 hours

One, two-hour laboratory session per week. These sessions will include practice in the basic techniques of experimental chemistry, and the relationship between science and technology is experienced first hand through laboratory experiments. Attendance at all laboratory sessions is obligatory. Instructions for all laboratory exercises will be posted on Omnivox.

Departmental Policies

- a) Regular attendance is expected. If lectures are missed, it is the responsibility of the student to cover the material missed and to be aware of any announcements made concerning assignments, quizzes, tests or changes to the laboratory schedule.
- b) Students must attend the laboratory session in which they are officially registered.
- c) There will be no make-up tests, quizzes or laboratory periods. If you miss an evaluation session or deadline due to illness, you must notify your instructor as soon as possible. A valid medical note is required to prove absence for a medical reason. If a test is missed for a valid reason, then the final exam mark will be used as a basis for a substitute for the missed test mark.
- d) Periodically there will be workshops held during the laboratory period. Attendance is required. Quizzes or assignments may be given during these workshops.
- e) **A special note concerning the use of chemicals:** this course uses chemicals as part of its normal teaching practices. If a student has experienced allergic reactions in the past due to any particular chemical or chemicals he or she must inform the instructor. In the event that an allergic reaction is experienced at the college, the student should report to Campus Security immediately (local 5226, 5231, or 9-514-398-7770).
- f) Cell phones and computers may only be used during class for pedagogical purposes at the discretion of the instructor.

College Policies

IPESA, Institutional Policy on the Evaluation of Student Achievement:

[http://www.johnabbott.qc.ca/wp-content/uploads/2014/12/2011-IPESA-FINAL-website-JAN-2013-rev-](http://www.johnabbott.qc.ca/wp-content/uploads/2014/12/2011-IPESA-FINAL-website-JAN-2013-rev-Dec-102014.pdf)

Dec-102014.pdf

Changes to Evaluation Plan in Course Outline (Article 4.3) Changes to the evaluation plan, during the semester, requires unanimous consent.

Mid-Semester Assessment MSA (Article 3.3) Sstudents will receive an MSA in accordance with College procedures.

Religious Holidays (Article 3.2) Students who wish to observe religious holidays must inform their teacher in writing within the first two weeks of the semester of their intent.

Student Rights and Responsibilities (Article 3.2, item 19.) It is the responsibility of students to keep all assessed material returned to them in the event of a grade review. (The deadline for a Grade Review is 4 weeks after the start of the next regular semester.)

(Article 3.3, item 7.) Students have the right to receive the results of evaluation, for regular day division courses, within two weeks. For evaluations at the end of the semester/course, the results must be given to the student by the grade submission deadline. Where applicable: for intensive courses (i.e.: intersession, abridged courses), timely feedback must be adjusted accordingly.

Cheating and Plagiarism (Article 8.1 & 8.2) Cheating and plagiarism are serious infractions against academic integrity which is highly valued at the College; they are unacceptable at John Abbott College. Students are expected to conduct themselves accordingly and must be responsible for all of their actions.

Cheating

Cheating means any dishonest or deceptive practice relative to examinations, tests, quizzes, lab assignments, research papers or other forms of evaluation tasks. Cheating includes, but is not restricted to, making use of or being in possession of, unauthorized material or devices and/or obtaining or providing unauthorized assistance in writing examinations, papers or any other evaluation task and submitting the same work in more than one course without the teacher's permission. It is incumbent upon the Department through the teacher to ensure students are forewarned about unauthorized material, devices or practices that are not permitted.

Plagiarism

Plagiarism is a form of cheating. It includes the intentional copying or paraphrasing (expressing the ideas of someone else in one's own words), of another person's work or the use of another person's work or ideas without acknowledgement of its source. Plagiarism can be from any source including books, magazines, electronic or photographic media or another student's paper or work.