



A POLYTECHNIC INSTITUTION

School of Manufacturing, Electronics and Industrial Processes

Program: Chemical Sciences

Option: A2, B2, C2

**CHSC 1202
Laboratory Safety Workshop**

Start Date: January 5, 2006

End Date: May 26, 2006

Total Hours: 40 **Total Weeks:** 20

Term/Level: 2 **Course Credits:** 2

Hours/Week: 2 **Lecture:** 1 **Lab:** 1

Shop: **Seminar:** **Other:**

Prerequisites

CHSC 1202 is a Prerequisite for:

Course No. Course Name

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■ **Course Description (required)**

Presents a basic course in chemical laboratory safety with emphasis on WHMIS practices, safe handling and storage of chemicals, care and use of safety equipment. Assignments and laboratory exercises on safety-related topics will be given.

■ **Evaluation**

Final Examination	40%	Comments:
Tests	30%	
Laboratory	25%	
Assignments / Quizzes	5%	
TOTAL	<u>100%</u>	

■ **Course Learning Outcomes/Competencies**

Upon successful completion, the student will be able to:

1. Appreciate the importance of safety in the laboratory.
2. Apply WHMIS procedures for labelling hazardous materials.
3. Utilize M.S.D.S. in the laboratory.
4. Recognize unsafe chemical storage conditions and rectify.
5. Identify and use correct personal protection equipment.
6. Select and use correct fire extinguishing equipment.
7. Understand how the regulation and rules applied to the working environment.

■ Verification

I verify that the content of this course outline is current.



Authoring Instructor

Dec 30, 2005

Date

I verify that this course outline has been reviewed.



Program Head/Chief Instructor

Dec 30 / 2005

Date

I verify that this course outline complies with BCIT policy.



Dean/Associate Dean

2006/01/04

Date

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.

■ Instructor(s)

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■ Learning Resources

Required:

None

Recommended:

1. Laboratory Health & Safety Handbook - W.C.B.
2. Industrial Health & Safety Regulations - W.C.B.

■ Information for Students

(Information below can be adapted and supplemented as necessary.)

Information for Students:

Note: Please refer to BCIT policy number 5002, Student Regulations Policy, for additional information. Policies are available at <http://www.bcit.ca/about/administration/policies.shtml>.

Ethics: BCIT assumes that all students attending the institute will follow a high standard of ethics. Incidents of cheating or plagiarism may, therefore, result in a grade of zero for the assignment, quiz, test, exam or project for all parties involved and/or expulsion from the course.

Assignments: Assignments, lab reports or projects must be done on an individual basis unless otherwise specified by the instructor. Late assignments, lab reports or projects will be devalued 10% per day late to a maximum of 3 days late.

Makeup Tests, Exams or Quizzes: There will be no makeup tests, exams or quizzes. If you miss a test, exam or quiz, you will receive zero marks. Exceptions may be made for **documented** medical reasons or extenuating circumstances. In such a case, it is the responsibility of the student to inform the instructor **immediately**.

Attendance: The attendance policy as outlined in BCIT Policy 5002 will be enforced. Attendance will be taken at the beginning of each session. Students not present at that time will be recorded as absent.

Illness: If you miss an evaluation such as an assignment, quiz, exam, or project, or you miss 3 or more consecutive days of class, you must provide the department with a BCIT Student Medical Certificate (available at <http://www.bcit.ca/admission/downloads.shtml>). You may be asked to complete the work that you missed or the course evaluation may be adjusted to reflect the missed component(s).

Attempts: Students must successfully complete a course within a maximum of three attempts. Students with two attempts in a single course must get written permission from the Associate Dean to attempt the course for the third time. Students who have not successfully completed a course within three attempts will not be eligible to graduate from the program.

Advancement: Students who fail three or more courses in a term cannot advance to the next term and may be asked to discontinue from the program.

Course Outline Changes: The material or schedule specified in this course outline may be changed by the instructor. If changes are required, they will be announced in class.

■ Assignment Details

TBA

Lecture Schedule

Week of/ Number	Outcome/Material Covered	Reference/ Reading	Assignment	Date
1	INTRODUCTION - Fundamentals of safety in the laboratory			January 5
2	HAZARDOUS CHEMICALS & REACTIONS - Chemicals which constitute a hazard alone or in combination with others.			
3	SPELL PREVENTION AND CLEAN UP - Techniques of avoiding spills, methods of neutralizing spills, use of spill kits.			19
4	SAFE CHEMICAL STORAGE - Procedures and equipment for safe storage of laboratory chemicals.			
5	VENTILATION AND FUME HOODS - Hazards of poor ventilation, proper selection, care and testing of fume hoods.			February 2
6	PERSONAL PROTECTION EQUIPMENT - Eye and face protection, hand protection, respiration apparatus, showers and eyes wash.			
7	PERSONAL PROTECTION EQUIPMENT DEMONSTRATION - Demonstration of correct installation and use of emergency equipment.			16
8	TOXIC AND CORROSIVE CHEMICALS - Definitions and terminology related to toxicity. - Recognition of toxic and corrosive chemicals.			

Week of Number	Outcome/Material Covered	Reference/Reading	Assignment	Date
9	MID-TERM # 1			March 2
10	FLAMMABLE CHEMICALS - Flammable materials, definitions, safe storage and transfer.			
11	FIRE PREVENTION AND FIRE FIGHTING EQUIPMENT - Classification and applications of fire extinguishers - laboratory and industrial			March 23
12	DEMONSTRATION OF FIRE EXTINGUISHING - Practical demonstration of laboratory and industrial fire extinguishing methods.			
13	COMPRESSED GASES - Hazards, safe handling and storing techniques for high pressure gas cylinders.			April 6
14	WASTE DISPOSAL OF CHEMICALS - Methods of safe disposal of chemicals. Disposal agencies and organizations.			
15	RADIATION SAFETY - Radiation hazards, measuring and monitoring devices.			20
16	SAFETY ORGANIZATION AND PLANNING			
17	MID-TERM # 2			May 4

Week of Number	Outcome/Material Covered	Reference/Reading	Assignment	Date
18	WHMIS - Introduction & classification - Labels & labeling - M.S.D.S.			May 11
19	Review			
20	Lab Exam (covered all materials both lectures and labs)			May 18
21	Exam week			May 25

Laboratory Schedule

Expt 1	Introduction to Spills			Jan 9, 13, 16
Expt 2	Breathing Apparatus			Jan 23, 27, 30
Expt 3	Fire Safety			Feb 6, 10, 13
Expt 4	Fume hoods			Feb 20, 24, 27
Expt 5	Introduction to WHMIS			March 3, 6, 10
Expt 6	WHMIS (on-line) training			March 20 – May 1

Note: Set 2A lab is switched to week B on Friday.