

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

COURSE OUTLINE

COURSE TITLE: INTRODUCTION TO ENGINEERING SAFETY

CODE NO.: ENV102-4

SEMESTER: II

PROGRAM: ENVIRONMENTAL / PULP AND PAPER ENGINEERING

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PREVIOUS OUTLINE DATED: NEW

APPROVED: *J. Bethune*

DEAN

Nov 24/94
DATE



INTRO TO ENGINEERING SAFETY

ENV102-4

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TOTAL CREDITS 64

PREREQUISITE(S): NIL

I. PHILOSOPHY/GOALS:

This course looks at Provincial Legislation and related regulations that define industry and workers rights and responsibilities. Recognition, evaluation and control methods as well as safe working practices are included.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):

Upon successful completion of this course the student will:

- 1) Differentiate between health and safety.
- 2) Define the role of the industrial hygienist.
- 3) Be able to complete a typical safety audit.
- 4) Demonstrate a knowledge of the Occupational Health and Safety Act.
- 5) Know the confined space entry regulations.
- 6) Demonstrate thorough knowledge of WHMIS legislation.
- 7) Differentiate between acute and chronic hazards.
- 8) Differentiate between chemical and physical hazards.
- 9) Be able to explain the terms TLV, STEL, LEL, UEL, etc.
- 10) Demonstrate knowledge of personal protective equipment.
- 11) Explain the appropriateness of the various means of respiratory protection.
- 12) Make simple calculations on concentrations of chemical and particulate hazards.

III. TOPICS TO BE COVERED:

**Approximate Time
Frames**

- | | |
|--|----------|
| 1) Introduction to Engineering Safety | 8 hours |
| 2) Legislative and Related Regulations | 10 hours |
| 3) Chemical and Physical Hazards | 10 hours |
| 4) Safe Work Practices | 10 hours |
| 5) Respiratory Protection | 10 hours |

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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES

Topic/Unit - Introduction to Engineering Safety

Learning Activities:

- Differentiate between health and safety
- Role of industrial hygienist
- Historical developments
- Classification of stresses
- Recognition, evaluation Control

Resources:

- Class Notes and Handouts
 - Plog - Fundamentals of Industrial Hygiene, Chapter 1
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Topic/Unit - Legislation and Related Regulations

Learning Activities:

- Discuss Occupational Health and Safety Act
- WHMIS and MSDS
- Confined space entry
- Regulations for designated substances

Resources:

- A guide to the Occupational Health and Safety Act
 - Class notes and handouts
 - WHMIS Pocket Guide
 - Occupational Health and Safety Act and Regulation 692
 - Confined Space Entry Manual, IAPA
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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES

Topic/Unit - Chemical and Physical Hazards

Learning Activities:

- Identification and evaluation of chemical hazards
- Toxicity, Acute and Chronic
- TLV, STEL, LEL, UEL, etc.
- Identification of physical hazards

Resources:

- Class notes and handouts
 - Plog - Fundamentals of Industrial Hygiene, Chapters 15, 16, 17, 4 and 9
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Topic/Unit - Safe Work Practices

Learning Activities:

- Confined space entry - distinction between class A, B and C
- Ventilation
- Personal protective equipment
- Trenching

Resources:

- Class notes and handouts
 - Confined Space Entry Manual IAPA
 - Plog - Fundamentals of Industrial Hygiene, Chapters 21 & 22
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Topic/Unit - Respiratory Protection

Learning Activities:

- Hazard assessment and control
- Respiratory selection, types and limitations

Resources:

- Class notes and handouts
 - Films
 - Test equipment
 - Respirators
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V. EVALUATION METHODS:

A final grade will be derived for the average result of three tests of equal value. Assignments may be incorporated into the evaluation and if this is done students will be advised in advance.

As is customary with many Sault College courses, letter grades will be assigned as follows:

90%+	A+
80 - 89%	A
70 - 79%	B
60 - 69 %	C
< 60%	R

Those students attaining an average of 55 - 59% may be permitted to write a full course supplementary exam provided they have

- a) achieved 60% or higher in at least one test
- b) completed all assignments and
- c) have maintained satisfactory attendance

VI. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor.

VII. REQUIRED STUDENT RESOURCES

- Occupational Health and Safety Act and Regulation 692 for Industrial Establishments
- Confined Space Entry Manual IAPA
- WHMIS Pocket Guide
- A Guide to the Occupational Health and Safety Act

Recommended

- Fundamentals of Industrial Hygiene by Barbara A Plog; National Safety Council

VIII. SPECIAL NOTES

Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.