DOC. #326

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

COURSE OUTLINE

COURSE TITLE: INDUSTRIAL HEALTH AND SAFETY

CODE NO.: ENV102-4 SEMESTER: II

PROGRAM: ENVIRONMENTAL / PULP AND PAPER ENGINEERING/WATER RESOURCES

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APPROVED: _____ June 14/96
DEAN DATE

INDUSTRIAL HEALTH AND SAFETY — ENV102-4

COURSE NAME — CODE NO.

TOTAL CREDITS 64

PREREQUISITE(S): NIL

I. PHILOSOPHY/GOALS:

This is an introductory course for all those interested in industrial practices from the standpoint of industrial hygiene and industrial health & safety. The 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 be able to:

1. Differentiate between the terms health and safety.
2. Differentiate between accidents and injuries.
3. List the functions of an industrial hygienist.
4. List the four key elements of a successful health and safety program.
5. List and explain the causes of accidents and injuries.
6. Identify the major items that should be included in any safety policy.'
7. Affirm why supervisors are the best persons to conduct accident investigations.
8. List and explain the rules for interviewing witnesses.
9. Work with the American Society of Safety Engineers Safety Audit.
10. Differentiate between sampling and monitoring.
11. Identify many different types of sampling equipment.
12. Explain the difference between accuracy and precision.
13. Explain the four basic rights that the Occupational Health and Safety Act gives to workers.
14. Identify who is covered under the Occupational Health and Safety Act and who is not.
15. State when a joint health and safety committee is required to be established.
16. Describe the make-up of a joint health and safety committee.
17. List and briefly explain the rights and responsibilities of joint health and safety committee members, employers, certified members and workers.
18. Explain the procedures and steps to be followed under the right to refuse work and the right to stop work.
19. List the powers of Ministry of Labour inspectors.

INDUSTRIAL HEALTH AND SAFETY — COURSE NAME

ENV102-4 — CODE NO.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES): (cont'd)

Upon successful completion of this course the student will be able to:

20. Explain how WHMIS information is transmitted to workers.
21. Name the six categories of controlled substances.
22. List and briefly explain the responsibilities of the supplier, the employer and the worker under WHMIS.
23. List the information required on WHMIS labels.
24. List and explain the sections of a Material Safety Data Sheet (MSDS).
25. Define and describe a confined space.
26. Describe the different classes of confined spaces.
27. List precautions that are necessary to ensure safe entry into confined spaces.
28. Explain the steps in dealing with hazards.
29. List the factors that determine the degree of hazard.
30. Differentiate between the terms hazardous and toxic.
31. Differentiate between the terms acute and chronic.
32. Define pertinent terms dealing with health hazards.
33. Differentiate between the terms TLV-TWA, TLV-STEL and TLV-C.
34. Use the NFPA labelling system.
35. Differentiate between the terms LEL and UEL.
36. Carry out calculations for Industrial Hygiene, such as determining concentrations and time weighted average exposure.
37. Identify physical hazards.
38. Demonstrate a knowledge of the process by which noise is detected and interpreted.
39. Indicate rules of thumb used to determine if there is excessive noise.
40. Demonstrate a knowledge of methods used to relieve cold stress and heat strain.
41. Identify work practices and controls that can reduce exposure levels.
42. Identify different types of personal protective devices used to minimize exposure to hazards.
43. Define general ventilation and calculate requirements to maintain safe working environments.
44. Define local ventilation and calculate air flows through and around local ventilation sites.
45. List and briefly explain the main components of a local exhaust system.
46. List the main design criteria for ventilation ducts.
47. Differentiate between a quantitative and a qualitative respirator fit test.

INDUSTRIAL HEALTH AND SAFETY	ENV102-4
COURSE NAME	CODE NO.

III.	TOPICS TO BE COVERED	Approximate Time Frames
1.	Introduction to Engineering Safety	12 hours
2.	Legislative and Related Regulations	14 hours
3.	Chemical and Physical Hazards	11 hours
4.	Safe Work Practices	6 hours
5.	Respiratory Protection	5 hours

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES:

Topic/Unit - Overview of Industrial Health and Safety

Learning Activities:

- Historical Perspective
- Health VS Safety
- Risk Acceptability
- The Industrial Hygienist
- Responsibility Accountability Authority
- Causes of Accidents and Injuries
- Health and Safety Policy
- Health and Safety Rules
- Accident Investigation
- The Safety Audit
- Sampling and Monitoring

Resources:

- Unit 1 - ENV102 Study Guide

Topic/Unit - Legislation and Related Regulations

Learning Activities:

- The Occupational Health and Safety Act
- Workplace Hazardous Material Information System
- Regulations for Industrial Establishments
- Confined Spaces

Resources:

Unit 2 - ENV102 Study Guide

INDUSTRIAL HEALTH AND SAFETY — ENV102-4

COURSE NAME — CODE NO.

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES: (cont'd)

Topic/Unit - Chemical and Physical Hazards

Learning Activities:

- Dealing With Hazards
- Degree of Health Hazard
- Chemical Hazard
- Threshold Limit Value
- NFPA Rating
- Fire and Explosion Hazards
- Industrial Hygiene Calculations for Chemical Hazards
- Calculations of Gas and Vapour Concentrations
- Physical Hazards
- Control of Chemical and Physical Hazards

Resources:

- Unit 3 - ENV102 Study Guide

Topic/Unit - Safe Work Practices

Learning Activities:

- Ventilation
- Respiratory Protection
- Classes of Respiratory Protective Devices
- Respiratory Fit

Resources:

- Unit 4 - ENV102 Study Guide

V. EVALUATION METHODS:

Eighty-five percent (85%) of the final grade will be derived from the average result of three tests of equal value. The completion of "Learning Activities" included in the study manual will account for the remaining 15%.

INDUSTRIAL HEALTH AND SAFETY — ENV102-4

COURSE NAME — CODE NO.

V. EVALUATION METHODS: (cont'd)

Under most circumstances, Test #1 with comprise Unit 1; Test #2 - Unit 2; Test #3 - Units 3 & 4.

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
c) maintained satisfactory attendance (for those students studying on campus)

VI. PRIOR LEARNING ASSESSMENT:

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

VII. REQUIRED STUDENT RESOURCES

Study Guide for ENV102 - Industrial Health and Safety

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.