

SAOLT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: ENVIRONMENTAL CONTROL
Code No.: PPE 164-2
Program: PULP AND PAPERMAKING OPERATIONS
Semester: SEMESTER II
Date: MARCH 1989
Author: ADAM SUGDEN

New:

Revision:

APPROVED: / X/yf^J\$2^^-
Cha'irfcefkon

 / % > ? j / : / f * .
Date

CALENDAR DESCRIPTION

ENVIRONMENTAL CONTROL

PPE 164-2

COURSE NAME

COURSE NUMBER

PHILOSOPHY/GOALS ;

This course is designed to provide the student with basic knowledge of the nature of liquid and gaseous waste streams arising from the manufacture of pulp and paper. Concepts of suspended and dissolved solids, biological and chemical oxygen demand (BOD and COD), toxicity, particulates and total reducible sulphur (TRS) will be dealt with.

Current and innovative waste treatment processes, pollution laws, control orders and pollution economics will be covered. Special attention will be focused on provincial and federal Environmental Acts, in particular how these relate to employer and employee responsibilities.

METHOD OF ASSESSMENT ;

Students will be graded on the basis of their performance on two tests to be given at appropriate intervals during the semester. (

Letter grades will be assigned according to the standard Sault College system. Students having a final overall cumulative percentage between 50 and 59% may be permitted to write a supplemental examination that will cover the material from the entire course.

TEXTBOOK(S) ;

The general reference book, used in other courses in this program, will be used.

Smook, G. Handbook for Pulp & Paper Technologists. Joint Textbook Committee of the Paper Industry, CPPA, Montreal, 1982.

Appropriate reference material relating to selected environmental laws will be made available to the students.

OBJECTIVES :

The overall educational objective of this course is that the student will be able to demonstrate knowledge of the nature, source and environmental hazards of waste streams arising from the pulp and paper industry. More specific objectives to be met are as follows:

1. Demonstrate knowledge of the sources of liquid and gaseous, waste streams arising from the pulp and paper industry.
2. Demonstrate knowledge of the nature and environmental hazards of these waste streams.
3. Demonstrate knowledge of how the wastes are monitored and how the environmental hazards are measured.
4. Demonstrate knowledge of the concepts of dissolved and suspended solids, BOD, COD, air-borne particulates and TRS.
5. Demonstrate knowledge of the concepts of toxicity of waste streams.
6. Demonstrate knowledge of the effect of pollutants on the ecosystem and its organisms and communities.
7. Demonstrate knowledge of environmental laws and control orders used in Canada and elsewhere.
8. Demonstrate knowledge of treatment systems used for pulp and paper mill wastes.
9. Demonstrate knowledge of the responsibilities of employers and employees in respect to pollution offenses.

NATURE OF PRESENTATION;

The course will be given for 2 hours per week using two single periods. The material will be presented through lectures and exercises. Outside reading will be assigned as necessary.

TOPICS COVERED:

WEEK

TOPIC

1. Introduction to course and topics covered
Pollution, an overview

- Sources of pollution from pulp and paper mills

Reasons for pollution
Methods of reducing existing pollution

WEEK	TOPIC
4.	<ul style="list-style-type: none">- Environmental hazards of waste streams- Effects on the ecosystem
5.	<ul style="list-style-type: none">- Effects on the ecosystem- Dissolved and suspended solids
6.	<ul style="list-style-type: none">- Measuring environmental hazards- Biological and chemical oxygen demands
7.	<ul style="list-style-type: none">- Test 1- Air-borne particulates and TRS
8.	<ul style="list-style-type: none">- Toxicity- Monitoring waste streams
9.	<ul style="list-style-type: none">- Environmental laws in Canada- The Ontario Environmental Protection Act
10.	<ul style="list-style-type: none">- The Canada Fisheries Act- Laws in other areas
11.	<ul style="list-style-type: none">- Waste treatment concepts
12.	<ul style="list-style-type: none">- Waste treatment or reduction systems- Primary treatment
13.	<ul style="list-style-type: none">- Secondary treatment- Tertiary treatment
14.	<ul style="list-style-type: none">- Responsibilities of employers and employees- Test 2