

**SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON**



COURSE OUTLINE

Course Title: INDUSTRIAL PROCESSES (Environmental Awareness)

Code No.: ENV 100-3 **Semester:** I

Program: Environmental Engineering Technician/Technology
Water Resources Engineering Technology
Pulp & Paper Engineering Technology
General Education

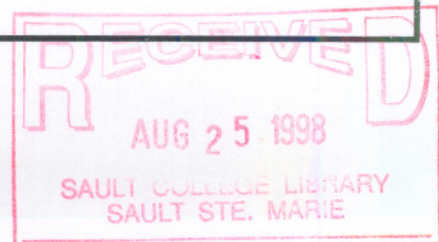
Author: Lory Vanderzwet

Date: August 1998 **Previous Outline Date:** April 1995

Approved: K. DeRosario Aug 20/98
Dean Date

Total Credits: 3 **Prerequisite(s):** None
Length of Course: 16 Weeks **Total Credit Hours:** 48

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For additional information, please contact Kitty DeRosario, Dean, School of Trades
& Technology Studies, (705) 759-2554, Ext. 642.



INDUSTRIAL PROCESS (ENVIRONMENTAL AWARENESS)
COURSE NAME

ENV 100
COURSE NUMBER

I. COURSE DESCRIPTION:

This is an introductory course in environmental awareness. It gives the student an understanding of the intersection between people, industry and the environment. Problems with consumption, growth, urbanization and waste generation are discussed. As well, some specific aspects of ecology are studied.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

(Generic Skills Learning Outcomes placement on the course outline will be determined and communicated at a later date.)

Upon successful completion of this course the student will demonstrate the ability to:

- 1) Describe the nature and scope of environmental problems.

Potential Elements of the Performance:

- Define “environment” and “pollution”
- Explain “water-air-land” interactions
- Explain the waste cycles for agrarian and industrialized societies
- List some modern-day crusades (and their works) in the actions against pollution

- 2) Explain population and economic growth and the effects these phenomenon have on the environment.

Potential Elements of the Performance:

- Explain patterns of population growth on various regions of the world
- List and define waves to measure economic growth
- List major technological improvements in societies and their accompanying environmental disturbances
- Define urbanization and explain the world’s current situation with regards to urbanization
- Discuss the dilemma of urbanization and industrialization

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE
(Continued)**

- 3) List the various sources of energy and explain current consumption patterns of these energy sources.

Potential Elements of the Performance:

- List renewable and non-renewable energy sources
- Identify trends in the consumption of energy sources
- Compare costs associated with various energy sources
- Compare environmental impacts associated with consumption of various energy sources
- Discuss Canada's energy situation

- 4) List natural environmental hazards and explain the trends and impacts of these hazards

Potential Elements of the Performance:

- Define "natural environmental hazard"
- List and classify natural environmental hazards by principal cause
- Explain how "extreme events" cause environmental changes
- Describe the trends with regards to property damage and death due to natural environmental hazards
- Explain how mankind attempts to cope with natural environmental hazards

- 5) List human environmental disturbances and explain the impacts of these hazards

Potential Elements of the Performance:

- Define "human environmental disturbances"
- List human environmental hazards
- List the gas that cause "the greenhouse effect"
- Describe effects of greenhouse gases
- Outline the control measures in place in effort to control climate change
- Explain the causes of acid rain
- Describe the effects of acid rain on the environment
- Outline the remedial and control measures to reduce effects of acid rain

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II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE (Continued)

- 6) Identify the inter-relationships among plants and animals, and the interaction between living organisms and their physical environment.

Potential Elements of the Performance:

- Define “ecology” and “ecosystems”
- Explain the energy flows in ecosystems
- Describe the food chain and trophic levels
- Outline the nutrient cycles (carbon, nitrogen, phosphorous)
- Define “limnology” and describe the element that compose it
- Define “eutrophication” and explain the causes and effects of it

III. TOPICS:

- 1) The Nature and Scope of Environmental Problems
- 2) Population and Economic Growth
- 3) Energy Growth
- 4) Natural Environmental Hazards
- 5) Human Environmental Disturbances
- 6) Ecology

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Environmental Science and Engineering, Henry and Heinke, (Second Edition)

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V. EVALUATION PROCESS/GRADING SYSTEM

The final grade will be determined according to the following components and weighting:

Assignments and Projects	20%
Four Term Tests (20% each)	<u>80%</u>
	100%

Grading System

A+	-	Consistently Outstanding (90-100%)
A	-	Outstanding Achievement (80-89%)
B	-	Consistently Above Average Achievement (70-79%)
C	-	Satisfactory or Acceptable Achievement (60-69%)
R	-	Repeat: Objectives of Course are not met (less than 60%)

NOTE: Students may be assigned a "R" grade early in the course for unsatisfactory performance.

VI. SPECIAL NOTES:

- Special Needs
 If you are a student with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717, 491 so that support services can be arranged for you.
- Retention of Course Outlines
 It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other post-secondary institutions.
- Substitute Course Information is available at the Registrar's Office.

VII. PRIOR LEARNING ASSESSMENT

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

