

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

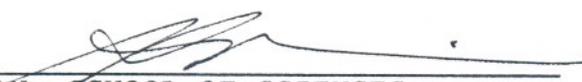
COURSE TITLE: DRAFTING

CODE NO.: DRF114 SEMESTER: I AND IV

PROGRAM: ENVIRONMENTAL ENGINEERING TECHNICIAN/TECHNOLOGY/
WATER RESOURCES

AUTHOR: MANFRED ENGEL

DATE: APRIL, 1993 PREVIOUS OUTLINE DATED: JUNE, 1990

APPROVED: 
DEAN, SCHOOL OF SCIENCES &
NATURAL RESOURCES

May 5 1993
DATE



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TOTAL CREDIT HOURS: 3

PREREQUISITE(S): NONE

I. **PHILOSOPHY/GOALS:** This course is designed to familiarize the student in the basics of drafting, to make the student proficient in linework, lettering, accuracy and interpretation of technical drawings.

II. **STUDENT PERFORMANCE OBJECTIVES:**

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

- 1) Be familiar with the use of drafting equipment.
- 2) Identify types of drawings.
- 3) Draw orthographic projections and isometric shapes.
- 4) Be familiar with techniques of dimensioning.
- 5) Be able to read Blue Prints of piping, ducting, electrical diagrams.

III. **TOPICS TO BE COVERED:**
(Optional)

Approximate Time Frames

- 1) Basic Instruments & Equipment 3
- 2) Drawing
- 3) Blue Print Reading
- 4) Detail working drawings

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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES:

1. Basic Instruments and Equipment:

a) Introduction to Drafting: 1 Period

- types of pencil
- types of lead
- types of drafting machine
- copies
- types of paper

b) Tee Square 1 period: 1/2 Period

- drafting table or board tee square, drafting paper
- use tee to set drafting paper square on table, draw parallel lines

c) Set Squares: 1/2 Period

- use in conjunction with tee square to draw parallel lines at various degrees
- use without tee square drawing parallel lines and various degrees

d) Scales: 1 Period

- metric scales and different types of metric scales
- imperial scales and different types of imperial scales

2. Drawings:

a) Types of Drawing: 1/2 Period

- artistic and technical drawings

b) Lettering: 1 1/2 Period

- Gothic letters
- Gothic numerals
- spacing

c) Basic Lines: 1/2 Period

- technique of drawing specific line
- meaning a purpose

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2. d) Scales: 1 1/2 Period
- calculating scales reduced and enlarged in both metric and imperial
 - measure using metric scales
- e) Orthographic Drawings: 3 1/2 Period
- know all views
 - project from two views to obtain third
 - make drawing from isometric drawing
- f) Isometric Drawing: 2 Period
- construction from orthographic drawing
 - proper technique
- g) Dimensioning: 1/2 Period
- correct procedure for dimensioning orthographic drawings
- h) Sketching Techniques: 1 Period
- sketching straight lines
 - sketching lines at different angles
 - sketching circles
- i) Piping Drawings:
- symbols
 - explain orthographic and isometric piping drawings
 - sketch piping
- j) Blue Print Reading:
- piping schematics
 - H/A/C ducting schematics
 - electrical schematics
3. Sectional Views: This is covered in orthographic drawings.

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4. Detail Working Drawings:

- a) Detail drawing of the complete Elliot Lake Sewage Treatment Plant including piping between components and flow of sewage.
- b) Detail drawing of building and piping schematic of sewage digester.
- c) Detail drawing of chlorine treatment in town water plant.
- d) Detail construction drawing of tailings dam.
- e) Detail construction drawing of sewage pond dam.

V. EVALUATION METHODS:

A final grade will be derived from the results of three tests and assignments weighed as follows:

Assignments	70%
Two tests each worth 15%	30%
Total	100%

The grading system used will be as follows:

A+	90% - 100%
A	80% - 89%
B	70% - 79%
C	55% - 69%
R	Repeat

- 1) Minimum acceptable grade for this course is 60%.

VI. REQUIRED STUDENT RESOURCES:

Text: Principles of Drafting and Blueprint Reading

VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION:

VIII. SPECIAL NOTES:

Students with special needs (e.g. 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.