

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

COURSE OUTLINE

Course Title: ELECTRICAL/ELECTRONIC DRAFTING

Code No.: ELR 112-2

Program: ELECTRICAL/ELECTRONIC (COMMON)

Semester: TWO

Date: AUGUST, 1986

Author: R. PEARMAN

New: _____ Revision: ✓

APPROVED: *L. P. Bragata*
Chairperson

86-09-03
Date

ELECTRICAL/ELECTRONIC DRAFTING

ELR 112-2

Course Name

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PHILOSOPHY/GOALS:

To develop the knowledge and skills required to produce electrical/electronic drawings in accordance with ANSI and IEEE standards.

METHOD OF ASSESSMENT (GRADING METHOD):

Grading will be based on submitted work. Attendance will be a factor in the grading procedure.

A	80 - 100%
B	66 - 79%
C	55 - 65%

TEXTBOOK(S):

Drafting for Electronics - Lamit and Lloyd, Charles E. Merril, 1985.

COURSE OUTLINE:

HOURS	TOPIC
2	<u>Manual Lettering</u> Pencil techniques: stroke, sequence, form and spacing, Lettering composition, mechanical lettering aids.
4	<u>Linework</u> Line technique, line types, precedence of lines, line conventions, visible or object lines, hidden lines, center lines, dimension lines, extension lines, leader lines, cross-sector lines, phantom lines, cutting plane and viewing plane lines, break lines. Electronic and Electrical line conventions. Sketching, lines, curved lines, bow compass and dividers, and the French curve.
6	<u>Projector and Dimensioning</u> Oblique, isometric, perspective and orthographic projections Multiview projections; glass box and hinge lines, auxiliary views, and sectioning. Dimensioning; units of measurement, dimensions, dimensioning elements, spacing dimensions, grouping dimensions and

orientation, numerals, application of dimension elements, dimensioning arcs, dimensioning slots, diameters, clarifiers, holes, counter bore, spot face and countersink. Threads; rectangular co-ordinate dimensioning, datum dimensioning, hole charts and tabular dimensioning, centerline dimensioning
Tolerances.

4 Pictorials

Pictorial illustration construction
Axonometric projection; isometric projection, isometric circles, isometric angles, oblique projector
Perspective projections.

4 Graphical Representations

General concepts in preparing graphs; selection of variables and curve fitting, curve identification, zero point location, steps in construction of an engineering graph; drawing smooth curves, scales and captions, families of curves.

8 Line graphs on semi-log paper, polar co-ordinates.

Bar charts

Pie graphs

Pictorial graphs

4 Designations, Standards and Abbreviations

Reference designations and placement

Component numbering

Reference designation tables

Control device designations

ANSI standards

Parts, lists and diagrams.

6 Components and Designations

Standards; tolerances, reference designations and color codes

Resistors; symbols, variable resistors

Capacitors; symbols, fixed and variable.

Inductors; symbols, air, iron and ceramic cored, adjustable transformers, air and iron cored, and multiple winding

Electronic devices; diodes; LEDs, zeners, tunnel and varactor;

transistors; bipolar, FET, MOSFET

Thyristors; SCR, UJT, PUT, GTO power transistors, power darlington; ICs

SPECIFIC OBJECTIVES:

The student shall be able to:

1. Manually letter freehand and use mechanical lettering aids.
2. Prepare drawings using correct line techniques and electrical/electronic line conventions.
3. Prepare oblique, isometric, perspective and orthographic projections, including dimensioning. Multi-view projections, glass box and hinge lines, auxiliary views and sectioning of electrical, electronic and mechanical devices and assemblies.
4. Prepare pictorial illustrations using isometric and oblique projections.
5. Prepare engineering graphs or rectangular, semi-log and polar graph paper, bar and pie charts.
6. Prepare drawings in accordance with ANSI standards using connect symbology for electrical and electronic circuits.