

# SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

## COURSE OUTLINE

Course Title : CAD Tools

Course No.: ELN-210

Program: Electrical / Electronics / Instrumentation Technician

Semester: Three

Author(s): Ed Sowka

Date: September 1998

Previous  
Outline Dated: September 1995

Approved: K. DeRosario 98.08-28

Dean Date

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

Course Name:  
CAD Tools

Course No.:  
ELN-210

**TOTAL CREDITS:** 3

**PREREQUISITES:** CET-110 (Substitute EDP-122)

**COURSE LENGTH:** 3 Hrs. / Week @ 16 Weeks

**TOTAL CREDIT HOURS:** 48

## **I. COURSE DESCRIPTION**

This course is designed to develop skills in the use of the AUTOCAD and Hiwire 2 computer aided drafting systems, to generate and modify electrical/electronic schematics and printed circuit boards (PCB's). This course will prepare the student for the automated drafting and PCB layout environment.

## **II. TOPICS TO BE COVERED:**

1. Hiwire 2 menu structures and commands.
2. AUTOCAD R14 menu structures and commands.

## **III. LEARNING OUTCOMES AND ELEMENTS OF PERFORMANCE:**

### **A. Learning Outcomes:**

1. Correctly utilize AUTOCAD and HIWIRE menu and command structure.
2. Accurately produce and modify schematic diagrams and PCB layouts.

### **B. Learning Outcomes with Elements of Performance:**

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

1. Produce and modify Electronic schematic diagrams using the Hiwire 2 software package.

#### **Potential elements of the performance:**

- Effectively understand and utilize the HW2 menus and commands.
  - Produce and modify schematic diagrams with correct and accurate labeling.
  - Produce and modify schematic symbols.
2. Produce and modify Electronic schematic diagrams using the Hiwire 2 software package.

#### **Potential elements of the performance:**

- Effectively understand and utilize the AUTOCAD R14 menus and commands.
- Produce and modify schematic diagrams with correct and accurate labeling.
- Produce and modify schematic symbols.

3. Understand the various components of a CAD Station.

#### **Potential elements of the performance:**

- Distinguish and discuss the hardware and software components of a CAD environment.
4. Produce and modify Printed Circuit Board layouts for simple schematics.

#### **Potential elements of the performance:**

- Develop a simple PCB layout.
- Understand the PCB construction process.



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#### IV. REQUIRED STUDENT RESOURCES:

- 4 - 3.5" 1.44 MB Floppy Disks

#### V. METHODS OF EVALUATION:

The following Grading System will be used:

A+ = 90% - 100%  
A = 80% - 89%  
B = 70% - 79%  
C = 55% - 69%  
R = less than 55% (Repeat Course)  
X = Temporary Grade as per College Policy

The final grade will be derived as follows;

50% - Hiwire 2 ( 2 Tests = 25% each)

50% - AUTOCAD ( 2 Tests = 25% each)

#### VI. SPECIAL NOTES:

1. The Instructor reserves the right to modify the course as is deemed necessary to meet the needs of the students.
2. Students with special needs (Physical Limitations, Visual/Hearing Impairments etc. ) are encouraged to discuss confidentially, required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Extension 493, 717 or 491.
3. Attendance to lab activities is compulsory, unless discussed with the instructor in advance of the absence. Your attendance and final grade are directly related.

#### VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in this course, should consult with the Professor.