SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: MEASUREMENTS AND SHOP PRACTICES

CODE NO.: ELR-114

PROGRAM: ELECTRICAL/ELECTRONIC/COMPUTER TECHNICIAN

SEMESTER: ONE

DATE: SEPTEMBER 1988

AUTHOR: E. SOWKA

NEW: _____ REVISION: XX

W.S.

APPROVED: L. Chagnon
Chairperson

88/08/30
Date

MEASUREMENTS AND SHOP PRACTICES **ELR 114**

PHILOSOPHY/GOALS:

To provide a sound understanding of the operating principles, characteristics and limitations of commonly used electrical measuring equipment. Approximately 75% of class time will be spent on laboratory exercises to develop skills in the use of those instruments.

METHODS OF ASSESMENT:

1. The student may be tested at the completion of each block of work.

2. At least 1 weeks notice will be given for the above and other major tests.

3. The above stated test may be theoretical, practical or any combination of both.

4. Short quizzes may and will be given without notice.

5. Each student will be subjectively evaluated continuously based on skills in the use of equipment, work habits, participation and attitude.

EVALUATIONS: Practical - 60%

Theory - 30%

Subjective - 10%

REFERENCES:

Manufacturers' Manuals
Suppliers' Catalogues
Instructors' Lab Assignments

TEXT:

Fundamentals of Electric Circuits
D.A. Bell 4th Edition

COURSE OUTLINE

BLOCK 1 Component Identification

Upon completion of this block, the student will be able to:

- Identify common electrical components
- Determine components' electrical characteristics
- Recall and draw the schematic symbols of common components
- Using the RESISTOR COLOR CODE, identify resistors and capacitors

BLOCK 2 Electronic Test Equipment

Upon completion of this block, the student will be able to:

- Correctly operate the following equipment;
  - Keithley 169 DMM
  - Simpson 260 VOM
  - Anatek 50-1S Power Supply
  - Sencore LC53 Z-Meter
- Correctly use the above test equipment to;
  - Test components
  - Measure voltage, current and resistance in series, parallel and series/parallel circuits

BLOCK 3 Soldering Techniques

Upon completion of this block, the student will be able to:

- Correctly use wire-wrapping equipment to make connections
- Operate common soldering/desoldering equipment
- Correctly remove/insert components on printed circuit boards, and make simple wire connections using the above equipment
- Efficiently assemble a Power Supply Kit using the above equipment

BLOCK 4 Oscilloscope Operation

Upon completion of this block the student will be able to:

- Correctly operate the following pieces of test equipment;
  - Tektronix 2213 Oscilloscope
  - Global 2001 Function Generator
  - Global 4001 Pulse Generator
- Use the above equipment to analyze sinusoidal and non-sinusoidal waveshapes