ok #19

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: ELECTRICAL FUNDAMENTALS

Code No.: ELR 100

Program: ELECTRICAL/ELECTRONIC COMMON

Semester: ONE

Date: MAY 1986

Author: R. Pearman

New: _____ Revision: X

APPROVED: A.P. Arozietto
CHAIRPERSON

DATE

ELECTRICAL FUNDAMENTALS — Course Name

ELR 100 — Course Number

PHILOSOPHY/GOALS:

When the student has completed this course, he should be familiar with the basic concepts of DC and AC circuits, which are necessary so that the student can continue to progress through the Electrical/Electronic Technology Program.

METHOD OF ASSESSMENT (GRADING METHOD):

Students will be assessed on a series of written exams and lab work.

Seventy percent of total mark is for theory and thirty percent for lab work. Attendance is compulsory for all labs, and at least eighty percent attendance for lectures.

Grades will be "A", "B", "C", or "R".

A	80 - 100%
B	66 - 79%
C	55 - 65%
R	less than 55%

TEXTBOOK(S):

Fundamentals of Electric Circuits - David A. Bell
3rd Edition

ELECTRICAL FUNDAMENTALS

ELR 100-7

TOPIC NO.	PERIODS		TOPIC DESCRIPTION
	THEORY	LAB	
1	10	4	Electrical Units Units of Current and Charge Conventional Current and Electro Flow Direct Current and Alternating Current EMF, Potential Difference & Volt Resistance and Conductance Ohm's Law Efficiency and Power
2	2	2	Conductors Insulators and Resistors Temperature Effect Conductor Resistivity
3	6	4	Series Circuits Current in a Series Circuit Voltage Drop in a Series Circuit Voltage Divider Law Power in a series Circuit Open-Circuit and Short-Circuit i Series Circuit

ELECTRICAL FUNDAMENTALS

ELR 100-7

TOPIC NO.	PERIODS		TOPIC DESCRIPTION
	THEORY	LAB	
4	4	4	Parallel Circuit Voltage and Current in a Paralle Circuit Current Divider Law Power in a parallel Circuit Open Circuits and Short Circuits in a Parallel Circuit
5	10	4	Series-Parallel Circuits Equivalent Series-Parallel Circuit Current in a Series-Parallel Circuit Voltage Drops in a Series-Parall Circuit
6	4	3	Network Theorems Superposition Theorem
7	4	2	Introduction to Magnetism Permanent magnets Electromagnets Hysteresis Eddy Currents

ELECTRICAL FUNDAMENTALS

ELR 100-7

TOPIC NO.	PERIODS		TOPIC DESCRIPTION
	THEORY	LAB	
9	7	2	Capacitance Electric Charge Capacitance and Capacitor Dimensions Capacitors in Series and Paralle Energy Stored in Charged Capacit Time Constant
10	6	2	Alternating Current and Fundamentals Generation of AC Voltage Frequency and Phase Angle AC Resistive Load Maximum Power Average and RMS Values of Sine Waves Phasors, and complex algebra
11	9	2	AC Circuits RL, RC and RLC series and parallel circuits Resonance Power faits