

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

COURSE OUTLINE

COURSE NAME: ENGINEERING SCIENCE
CODE NO.: ELR 105
PROGRAM: ELECTRICAL/ELECTRONICS
SEMESTER: TWO
DATE: JANUARY 1994
PREVIOUS
OUTLINE DATED: JANUARY 1993
AUTHOR: MARK KOSKI

NEW: _____ REV.: X

APPROVED:

W. Filipowich
CO-ORDINATOR

Z.P. Czajka
DEAN

Jan 3, 1994
DATE

94-01-04
DATE

COURSE NAME
ENGINEERING SCIENCE

CODE NO.
ELR 105

TOTAL CREDIT HOURS: 3

PREREQUISITE(S): NONE

PHILOSOPHY/GOALS:

This course will provide the student with a basic understanding of engineering principals and physical quantities commonly encountered in today's industrial processes.

STUDENT PERFORMANCE OBJECTIVES:

UPON SUCCESSFUL COMPLETION OF THIS COURSE, THE STUDENT WILL BE ABLE TO:

1. Describe various uses of light and sound.
2. Describe various methods of temperature and pressure measurement.
3. Explain the fundamental scientific concepts behind no. 1 & 2.
4. Calculate solutions to assigned problems dealing with the concepts discussed.

TOPICS TO BE COVERED:

1. FUNDAMENTALS OF MEASUREMENT
 - fundamental units and conversions
 - direct vs inferred measurements
 - static vs dynamic characteristics
2. SOUND
 - frequency spectrum
 - decibels
 - loudspeakers and microphones
3. LIGHT
 - frequency spectrum
 - optoelectronic devices
 - fibre optics
4. TEMPERATURE MEASUREMENT
 - RTDs and Thermocouples
 - thermometers
 - heat transfer and temperature scales
5. PRESSURE MEASUREMENT
 - definition
 - measuring devices and principals

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LEARNING ACTIVITIES	REQUIRED RESOURCES
1. FUNDAMENTAL UNITS AND CONVERSIONS <ul style="list-style-type: none">- Units - length- mass- time - Conversions<ul style="list-style-type: none">- metric, Imperial- length, mass, volume, force, pressure, temperature, etc	Handouts
2. SOUND <ul style="list-style-type: none">- frequency spectrum- decibels- loudspeakers- microphones	Handouts
3. LIGHT <ul style="list-style-type: none">- frequency spectrum- optoelectronic devices- fibre optics	Handouts & Introductory Electronic Devices and Circuits by Paynter
4. TEMPERATURE <ul style="list-style-type: none">- rtd's and thermocouples- thermometers- heat transfer and temperature scales	Handouts
5. PRESSURE <ul style="list-style-type: none">- definitions- measuring devices & principals of operation	Handouts

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METHOD(S) OF EVALUATION

TESTS: One test at the end of each section.

5 tests @ 20% each

TOTAL 100%

THE GRADING SYSTEM USED WILL BE AS FOLLOWS:

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

R REPEAT

REQUIRED STUDENT RESOURCES:

TEXT BOOK: Introductory Electronic Devices and Circuits
By: Paynter

HANDOUTS FROM INSTRUCTOR

ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE
LIBRARY BOOK SECTION:

SPECIAL NOTES: