

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: INSTALLATION METHODS IV

CODE NO. : ELR243 **SEMESTER:** 4

PROGRAM: ELECTRICAL ENGINEERING
TECHNICIAN/TECHNOLOGIST

AUTHOR:

DATE: JAN 2011 **PREVIOUS OUTLINE DATED:** JAN 2010

APPROVED:

“Corey Meunier”
CHAIR

DATE

TOTAL CREDITS: 3

PREREQUISITE(S): ELR 233

HOURS/WEEK: 3

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For additional information, please contact Corey Meunier, Chair
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I. COURSE DESCRIPTION:

This course introduces the student to electrical installation methods for Monitoring and Communication Systems. Corresponding sections of the Canadian Electrical Code and the Canadian Building Code are covered in conjunction with ULC Standards relating to installation, inspection, testing and verification of Fire Alarm Systems. Nurse call systems, intrusion alarm systems, institutional clocks and home automation will also be covered.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. *Interpret the Canadian Electrical Code (CEC), National Building Code and ULC requirements pertaining to Fire Alarm Systems.***Potential Elements of the Performance:**

- Describe the principles of operation and installation requirements of single stage, two stage, initiation and supervisory circuits.
- Describe the principles of operation and installation requirements for pull stations, detectors, flow switches, bells, speakers, addressable initiating devices and sprinkler supervisory devices.
- Describe the principles of operation and installation requirements of speaker and ancillary relay circuits, annunciators and emergency phones.
- Describe the basic operation of wet and dry sprinkler systems.
- Describe the uses and dangers of fire suppression agents, the components and systems used for their installation in suppression systems
- List the ULC standard for the installation, inspection, testing and verification of Fire Alarm Systems.
- Use the building code to determine the installation requirements for fire alarm systems and related equipment.
- Demonstrate the installation, troubleshooting and testing of speaker and ancillary relay circuits, annunciators and emergency phones.
- Demonstrate the installation, operation and testing of alarm panels with respect to lights and lamps, power supplies, overcurrent devices, ground fault indicators, annunciator panels and common trouble functions.

2. *Describe the principles of operation of various commercial and residential monitoring and communication systems.***Potential Elements of the Performance:**

- Describe the principles of operation of institutional clock systems.
- Describe the wiring and operation of intrusion systems and devices.

- Describe the wiring and operation of paging and communication systems.
- Describe the wiring and operation of nurse call stations.
- Describe the principles of operation and installation requirements for common home automation systems.
- Describe the methods used to install, terminate and test fibre optic cables.

III. TOPICS:

1. Fire Alarm Systems
2. Monitoring and Communication Systems

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Canadian Electrical Code Part 1 (Current Edition)
- Electrical Wiring Commercial (Current Edition)
- Electrical Wiring Residential (Current Edition)
- Introduction To The Fire Detection and Alarm Industry, CFAA
ISBN 0-9692433-2-4
- Fire Alarm Systems A Reference Manual, Revised Edition , CFAA
ISBN 0-9692433-5-9
- Safety glasses, multimeter and hand tools.

V. EVALUATION PROCESS/GRADING SYSTEM:

2-3 Tests	70%
Shop activities and associated reports	<u>30%</u>
Total	100%

While marks are not given for attendance, marks may be deducted for classes missed. **See special notes section.**

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

CR (Credit) Credit for diploma requirements has been

	awarded.
S	Satisfactory achievement in field /clinical placement or non-graded subject area.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be granted admission to the room.

Additional Information:

If a student misses a test he/she must have a valid reason (i.e. medical or family emergency – documentation will be required). In addition, the instructor **must** be notified **prior** to the test sitting. If this procedure is not followed the student will receive a mark of zero on the test with no make-up option.

Attendance to shop activities is compulsory, unless discussed with the instructor in advance of the absence and the absence is for a medical or family emergency. Being late for class can be considered as an absence.

Any student that is absent for any shop class will be required to provide a doctor's note immediately upon returning. Failing to do so will result in a grade of 0% being assigned to the missed shop activity. At the instructor's discretion a deduction of 5% may be made from the student's final mark for each shop class or portion thereof missed

Students are required to bring safety glasses and hand tools to all shop classes.

Use of cell phones/PDAs for any form of communication (voice, text...) during class or lab time is strictly prohibited. Cell phones/PDAs must be silenced during

regular class and lab times and must be turned off and kept out of sight during test sittings. Failure to follow the latter requirement during a test sitting will result in a grade of 0 being assigned.

Students may not wear earphones of any kind during lab activities or test sittings. This does not include hearing aids required for the hearing impaired.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.