

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: Installation Methods IV

CODE NO. : ELR 243 **SEMESTER:** 4

PROGRAM: Electrical Engineering Technician/Technologist

AUTHOR: S. Hager

DATE: 12-2008 **PREVIOUS OUTLINE DATED:**

APPROVED:

**“Corey Meunier”
CHAIR**

DATE

TOTAL CREDITS: 3

PREREQUISITE(S): ELR 233

HOURS/WEEK: 3

Copyright ©2008 The Sault College of Applied Arts & Technology
Reproduction of this document by any means, in whole or in part, without prior written permission of Sault College of Applied Arts & Technology is prohibited.
For additional information, please contact Corey Meunier, Chair
School of Technology & Skilled Trades
(705) 759-2554, Ext. 2610

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:

3 Tests	70%
Shop activities and associated reports	30%

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

Grade	Definition	<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:Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. Students who engage in academic dishonesty will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

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. 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. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.