

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: MONITORING & COMMUNICATION SYSTEMS

CODE NO. : ELR726 **SEMESTER:** Intermediate
Level

PROGRAM: Construction & Maintenance/Industrial Electrician
Apprenticeship

AUTHOR: S. Hager/R. McTaggart

DATE: May **PREVIOUS OUTLINE** October
2015 **DATED:** 2014

APPROVED:

"Corey Meunier"
CHAIR

TOTAL CREDITS: 3

PREREQUISITE(S):

HOURS/WEEK: 3

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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.

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.
- Describe the principles of operation of institutional clock systems.
- List the ULC standard for the installation, inspection, testing and verification of Fire Alarm Systems.
- Use the Canadian Building Code to determine the installation requirements for fire alarm systems and related equipment.

- Demonstrate the installation, troubleshooting and testing of initiation and supervisory circuits and devices including two stage initiator wiring.
- 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.
- Connect intrusion systems and devices.
- Connect the wiring and operation of nurse call systems.
- Connect paging and communications systems.
- 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. Monitoring and Communication Systems.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Ontario Electrical Safety Code Part 1 (Current Edition)
- Electrical Wiring Commercial (Current Canadian Edition published by Delmar)

Notes supplied by instructor

V. EVALUATION PROCESS/GRADING SYSTEM:

Theory Tests and Assignments: 50%

Shop activities, associated reports and shop test : 50%

While marks are not given for attendance, marks may be deducted for classes missed. Any labs or assignments will be due at the start of the next class after the material is covered and any that are late will be assigned a zero grade.

See Special Notes section

Tests will not be returned but will be available for review.

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% | 3.00 |
| B | 70 - 79% | 2.00 |
| C | 60 - 69% | 1.00 |
| D | 50 – 59% | 0.00 |
| F (Fail) | 49% and below | |
| 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.

If a student misses a test/lab he/she must have a valid reason (i.e. medical or family emergency – documentation may be required). In addition, the instructor **must** be notified **prior** to the test or lab sitting. If this procedure is not followed the student will receive a mark of zero on the test/lab with no make-up option. Students may not submit lab reports for labs in which they were not in continuous attendance. Lab reports not submitted by the assigned deadline will receive a grade of 0.

There are no make up tests, assignments or extra work allowed for any reason.

Any material covered during any absence, legitimate or not, is the responsibility of the student.

Deadlines will be specified for submission of assignments for grading. Late assignments will not be accepted and a grade of 0 will be assigned.

For this course **WebCT/LMS** is considered 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.

Required texts are brought to each class. Sections of the course text books may be highlighted however they are not to be written in. Tests may be 'open book' as far as the textbooks are concerned. However, use of a book containing markings other than the aforementioned highlights is not permitted and will be considered as academic dishonesty. Students are responsible for supplying their own texts for tests. Sharing books during a test is not permitted.

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.

Attendance to scheduled lab activities is compulsory, unless permission has been granted by the instructor. Lab attendance and final grade are directly related. If a student arrives late for, or is not continuously present and actively participating at (scheduled breaks excepted), a scheduled lab class he/she will be considered absent for the entire class and will not be permitted to submit the associated lab report.

Students must continuously wear all Sault College required personal protective equipment (PPE) while in B1065. Failure to do this will result in expulsion from the lab activity and a grade of zero being assigned. Students are expected to be wearing their required PPE prior to entering the lab. Safety glasses and hard toed boots or shoes are required. If a student repeatedly neglects to wear PPE as required he/she will be considered to be in violation of the Sault College Academic Code of Conduct and may be sanctioned accordingly (see Student Code of Conduct & Appeal Guidelines). For instance, first violation – verbal warning, second violation written warning, third violation suspension from lab activities.

If a student misses class time due to sickness, family emergency or other reason beyond his/her control the student must at his/her first opportunity meet with the course faculty to discuss if the missed time has placed the student at an increased risk of failing. The student must follow up the meeting by emailing the faculty with a summary of the meeting's discussions. Documentation validating the missed time may be required.

VII. COURSE OUTLINE ADDENDUM:

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