



**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. ELR243 is a continuation of Installation Methods III which dealt primarily with commercial wiring practices.

**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.
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2. Interpret CEC requirements pertaining to data and communication cabling.
- Potential Elements of the Performance:
- Interpret CEC regulations governing the installation of optical fibre cables including non-conductive optical fibre, conductive optical fibre and hybrid cables (Section 56); coaxial cables including protection, grounding, indoor, outdoor, overhead and underground installations (Section 54); and communication cables including protection, grounding, indoor, outdoor, overhead and underground installations (Section 60).
  - Describe the methods used to install, terminate, and test fibre optic cables.

**III. TOPICS:**

1. Monitoring and Communication Systems.
2. Data and Communication Cabling.

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

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

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Quizzes (may be unannounced) 1% each to a maximum of 10% 0 to 10%

3 Tests 60 to 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.

The following semester grades will be assigned to students in postsecondary courses:

<b>Grade</b>	<b><u>Definition</u></b>	<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:

### Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 493 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.

### Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. 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 may 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

Although attendance of the lectures is not mandatory it is strongly encouraged. Quizzes may be used as an incentive to attend classes and as an indicator of class participation and attendance. As such there will be no makeup of missed quizzes.

Code books are to be brought to class. Quizzes and tests will require the use of a code book and students are responsible for bringing a copy to each class. Sections of the course text books may be highlighted however they are not to be written in. Tests and quizzes will be 'open book' as far as the code book is concerned and may be 'open book' for the prints text as well. 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 and quizzes. Sharing books during a test or quiz is not permitted.

#### **VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

#### **VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.