

I. COURSE DESCRIPTION:

This course is a continuation of ELR623 and ELR723, Canadian Electrical Code Level I and II. The primary focus will be on code sections relating to industrial wiring practices.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Interpret the Canadian Electrical Code (CEC) requirements pertaining to industrial installations.

Potential Elements of the Performance

- Interpret the CEC regulations associated with the installation of two or more continuous and non-continuous duty service motors on a branch circuit or feeder including conductor size and overcurrent device sizes (Section 28).
- Interpret the CEC regulations associated with the installation of a hermetic refrigerant motor-compressor on a branch circuit including conductor size, overload size, and overcurrent device size (Section 28).
- Interpret the CEC regulations regarding the installation of reduced voltage starters including overload size, and overcurrent device size.
- Calculate tap conductor size for motor and compressor branch circuits.
- Interpret the CEC regulations associated with the installation of transformers including dry type and liquid-filled (Section 26).
- Calculate minimum conductor size and maximum overcurrent protection for individual power and distribution transformers including dry-type, liquid-filled, high-voltage and low-voltage on a circuit (Section 26).
- Calculate minimum conductor size and maximum overcurrent for more than one power and distribution transformer including dry-type, liquid-filled, high-voltage and low-voltage on a feeder or branch circuit (Section 26).

- Interpret the CEC regulations regarding welders (Section 42).
- Calculate the minimum conductor size and the maximum overcurrent protection for individual resistance and transformer type welders (Section 42).
- Calculate the minimum conductor size and the maximum overcurrent protection for more than one resistance and/or transformer type welder on a circuit (Section 42).
- Interpret the CEC regulations for the installation of capacitors (Section 26).
- Calculate the minimum conductor size, maximum overcurrent device size and disconnecting means size for capacitors (Section 26).
- Interpret the CEC regulations for placing capacitors in motor circuits (Section 26).
- Select overcurrent devices based on voltage, continuous load, and maximum current interrupting ratings as per manufacturer's specifications, CEC and customer's requirements.
- Interpret the CEC regulations associated with high voltage installations including wiring methods, grounding and bonding (Section 36)

III. TOPICS:

1. Canadian Electrical Code, Industrial Rules

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Canadian Electrical Code, Part 1, 20th Edition/2006
ISBN # 1-55436-023-4

V. EVALUATION PROCESS/GRADING SYSTEM:

Course grade will be based on three to five equally weighted tests.
See special notes.

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:

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 instructor and/or the Special Needs office. Visit Room E1204 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.

Codebooks are to be brought to class. Tests will require the use of a codebook and students are responsible for bringing a copy to each class. Sections of the course textbooks may be highlighted however they are not to be written in. Tests will be ‘open book’ as far as the codebook is 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 test. Sharing books during a test 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.