



**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 student 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/2009

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

Quizzes (may be unannounced) 1% each to A maximum of 20%	0 to 20%
3 or 4 Tests* equally weighted	80 to 100%

\*See special notes.

The following semester grades will be assigned to students:

<b>Grade</b>	<b><u>Definition</u></b>	<b><i>Grade Point Equivalent</i></b>
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:****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.

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.

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. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

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

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

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.

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*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade "C", (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. 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.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

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 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.

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

Requires texts are brought to each class. Sections of the course text books may be highlighted however they are not to be written in. Tests will 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.