



## COURSE OUTLINE: ELR623 - CAND.ELECT. CODE - 1

Prepared: Sean Hager

Approved: Corey Meunier, Chair, Technology and Skilled Trades

<b>Course Code: Title</b>	ELR623: CANADIAN ELECTRICAL CODE - LEVEL 1					
<b>Program Number: Name</b>	6520: CONST & MTCE ELE BAS					
<b>Department:</b>	ELEC. APPRENTICES					
<b>Semesters/Terms:</b>	19F, 20W, 20F					
<b>Course Description:</b>	This course introduces the student to the Canadian Electrical Code with a focus on the general sections of the code and residential wiring practices.					
<b>Total Credits:</b>	4					
<b>Hours/Week:</b>	4					
<b>Total Hours:</b>	32					
<b>Prerequisites:</b>	There are no pre-requisites for this course.					
<b>Corequisites:</b>	There are no co-requisites for this course.					
<b>General Education Themes:</b>	Science and Technology					
<b>Course Evaluation:</b>	Passing Grade: 50%, D					
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<p>Grade            Definition Grade Point Equivalent            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</p> <p>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            W Student has withdrawn from the course without academic penalty.</p>					
<b>Books and Required Resources:</b>	Canadian Electrical Code current version Publisher: CSA Group Edition: Current					
<b>Course Outcomes and Learning Objectives:</b>	<table border="1"> <thead> <tr> <th>Course Outcome 1</th> <th>Learning Objectives for Course Outcome 1</th> </tr> </thead> <tbody> <tr> <td>State the purpose of the Canadian Electrical Code and identify which sections apply to a given electrical installation.</td> <td> <ul style="list-style-type: none"> <li>- State the objective, scope, and general arrangement of the Canadian Electrical Code. (CEC)</li> <li>- Identify the method used to indicate code regulation changes in new editions of the CEC. Identify installation requirements for electrical equipment (other than heating) installed in residential</li> </ul> </td> </tr> </tbody> </table>	Course Outcome 1	Learning Objectives for Course Outcome 1	State the purpose of the Canadian Electrical Code and identify which sections apply to a given electrical installation.	<ul style="list-style-type: none"> <li>- State the objective, scope, and general arrangement of the Canadian Electrical Code. (CEC)</li> <li>- Identify the method used to indicate code regulation changes in new editions of the CEC. Identify installation requirements for electrical equipment (other than heating) installed in residential</li> </ul>	
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	<p>occupancies as specified in the Installation of Electrical Equipment section of the CEC.</p> <ul style="list-style-type: none"> <li>- Explain terms as listed in the Object, Scope and Definitions` section and the Special Terminologies located in the general rules of other sections of the CEC.</li> <li>- Interpret general rules (Section 2) of the CEC.</li> </ul>
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
Interpret rules of the Canadian Electrical Code which apply to residential installations.	<ul style="list-style-type: none"> <li>- Explain the CEC regulations regarding grounding and bonding (Section 10) of electrical systems and circuits operating at 750 volts or less.</li> <li>- Interpret the regulations of the CEC regarding wiring methods (Section 12) for installations operating at 750 volts or less.</li> <li>- Explain the general regulations regarding Class 1 and Class 2 signal and remote control Circuits (Section 16) of the CEC.</li> <li>- Interpret the CEC regulations for Pools, Tubs, Spas (Section 68).</li> <li>- Identify temporary wiring installation requirements for buildings or projects under construction or demolition (Section 76) of the CEC.</li> <li>- Calculate conduit fill where all conductors are the same size and have the same insulation type.</li> <li>- Calculate conduit fill where the conductors have different sizes and/or different insulation types.</li> <li>- Calculate raceway fill for the raceway types listed in Section 12 where all conductors are the same size and have the same insulation type.</li> <li>- Calculate raceway fill for the raceway types listed in Section 12 where the conductors have different sizes and/or different insulation types.</li> <li>- Calculate the maximum number of conductors sized #14 to #6 that are permitted in a box.</li> <li>- Calculate the minimum size of pull boxes for straight, angle and u-pulls for conductors larger than #6.</li> <li>- Calculate ampacity and apply correction factors for single conductors in free air, including conductors in parallel.</li> <li>- Calculate ampacity and apply correction factors for conductors in a raceway or multi-conductor cable, including conductors in parallel.</li> <li>- Calculate ampacity and apply correction factors for flexible cords and equipment wires.</li> <li>- Calculate ampacity and apply correction factors for underground conductor installations using IEEE Standard 835.</li> <li>- Calculate the size of service equipment for single dwelling units.</li> <li>- Identify installation requirements for electrical equipment (other than electric heating) including: lighting, receptacles, heating, and appliances installed in single dwelling occupancies as specified in the Installation of Electrical Equipment Section 26 and 30 of the CEC.</li> <li>- Interpret the CEC regulations regarding the installation of fire alarms located in dwelling units.</li> <li>- Explain requirements for the installation and wiring of Fixed Electric Surface and Space Heating Systems located in</li> </ul>

residential occupancies.

**Evaluation Process and Grading System:**

<b>Evaluation Type</b>	<b>Evaluation Weight</b>
Tests (2)	100%

**Date:**

August 29, 2019

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further information.

