



COURSE OUTLINE: ELR825 - PRINTS - LEVEL 3

Prepared: Sean Hager

Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	ELR825: PRINTS - LEVEL 3
Program Number: Name	6522: CONST & MTCE ELE ADV
Department:	ELEC. APPRENTICES
Semesters/Terms:	21W, 20F, 19W
Course Description:	This course covers interpretation of construction drawings and specifications relating to industrial construction projects. It focuses on the electrical installation.
Total Credits:	3
Hours/Week:	2
Total Hours:	20
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Essential Employability Skills (EES) addressed in this course:	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 3 Execute mathematical operations accurately.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p>
Course Evaluation:	<p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>
Other Course Evaluation & Assessment Requirements:	<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</p>

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.



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	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 W Student has withdrawn from the course without academic penalty.					
Books and Required Resources:	Canadian Electrical Code Publisher: CSA Group or PS Knight Edition: current Electrical Wiring Industrial Canadian Edition Publisher: Delmar					
Course Outcomes and Learning Objectives:	<table><tr><th>Course Outcome 1</th><th>Learning Objectives for Course Outcome 1</th></tr><tr><td>Interpret the Canadian Electrical Code requirements pertaining to industrial installations.</td><td>Use architectural, electrical, and mechanical drawings and specifications to determine installation requirements for a construction project. Read and develop complex single line, schematic and wiring diagrams. Identify the standards for IEC, NEMA, and EEMAC rated starters and contactors as per manufacturer` s specifications. Use plans to design branch circuit layouts for single phase and three phase systems from panels to the points of utilization, employing load balancing techniques. Complete a cable pulling calculation to determine the stresses on the conductor/cable during installation. Prepare branch circuit, feeder, and bus duct electrical estimates, using the drawings, for construction installations, and transfer the information to material order sheets. Complete an electrical system design from the point of utility supply, emergency supplies and transfers, to a panel board and associated loads including transformers, feeders, bus duct, splitters, disconnects, capacitors and motors, applying Code rules. Complete the grounding and bonding requirements for a high voltage substation installation including indoor and outdoor substations and electrical vaults. State the precautions necessary for the installation of a stress cone. Describe the preparation and termination of shielded high voltage cables. Describe the preparation and termination of concentric neutral high voltage cables. Describe the testing methods for high voltage cables and identify all applicable safety requirements.</td></tr></table>	Course Outcome 1	Learning Objectives for Course Outcome 1	Interpret the Canadian Electrical Code requirements pertaining to industrial installations.	Use architectural, electrical, and mechanical drawings and specifications to determine installation requirements for a construction project. Read and develop complex single line, schematic and wiring diagrams. Identify the standards for IEC, NEMA, and EEMAC rated starters and contactors as per manufacturer` s specifications. Use plans to design branch circuit layouts for single phase and three phase systems from panels to the points of utilization, employing load balancing techniques. Complete a cable pulling calculation to determine the stresses on the conductor/cable during installation. Prepare branch circuit, feeder, and bus duct electrical estimates, using the drawings, for construction installations, and transfer the information to material order sheets. Complete an electrical system design from the point of utility supply, emergency supplies and transfers, to a panel board and associated loads including transformers, feeders, bus duct, splitters, disconnects, capacitors and motors, applying Code rules. Complete the grounding and bonding requirements for a high voltage substation installation including indoor and outdoor substations and electrical vaults. State the precautions necessary for the installation of a stress cone. Describe the preparation and termination of shielded high voltage cables. Describe the preparation and termination of concentric neutral high voltage cables. Describe the testing methods for high voltage cables and identify all applicable safety requirements.	
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		Select overcurrent devices to ensure proper overcurrent coordination as per manufacturer` s specifications, CEC and customer` s requirements.				
Evaluation Process and Grading System:	<table><tr><th>Evaluation Type</th><th>Evaluation Weight</th></tr><tr><td>Tests (2)</td><td>100%</td></tr></table>	Evaluation Type	Evaluation Weight	Tests (2)	100%	
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Tests (2)	100%					
Date:	August 18, 2020					
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.					

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