CANADORE
college

COURSE NAME:	ELE120 Practical Electrical I
Credit Value:	3
Total Course Hours:	49
Prerequisite Course(s):	None
Corequisite Course(s):	None

COURSE DESCRIPTION

The learners will be introduced to the electrical practical environment where they will learn and demonstrate the safe operation and use of trade tools and equipment. Learners will demonstrate installation procedures for a 100-amp residential consumer's service. This course also includes an introduction to wiring receptacles, switches and lights.

LAND ACKNOWLEDGEMENT

Canadore College resides on the traditional territory of the Anishinaabeg and within lands protected by the Robinson Huron Treaty of 1850. This land is occupied by the people of Nipissing First Nation since time immemorial.

PLAR INFORMATION

This course is eligible for Prior Learning Assessment and Recognition. Students are advised to discuss options with their program coordinator.

COURSE LEARNING OUTCOMES

Upon completion of this course, the student will have reliably demonstrated the ability to:

1.0 Apply health and safety standards and best practices to protect self and others, and facilitate the completion of work; according to company policies and procedures.

   1.1 Select, wear, and maintain applicable personal protective equipment.

   1.2 Recognize safe working conditions and report hazardous conditions.

   1.3 Perform housekeeping duties.

2.0 Operate common hand and power tools used in the electrical trade according to manufactures specifications, and company policies and procedures.

   2.1 Select the appropriate tool for the task.

   2.2 Inspect the tool for hazardous conditions.

   2.3 Maintain tool in good operational order.

   2.4 Operate common hand and power tools.

3.0 Install a 100 Amp overhead single phase service for a residential dwelling according to company policies and procedures.

   3.1 Mount and secure components using fasteners designed for attachment to the material of the support structure.

3.2 Install service conductors without damage to insulation, without stress and the neutral conductor is identified.

3.3 Terminate service conductors so that insulation is removed and conductors are tightened and secured according to manufacturers' specifications.

3.4 Bond non-current carrying metallic service components using OESC-approved bonding methods.

3.5 Ground neutral conductor at point of service entrance using CEC-approved grounding methods and grounding electrodes.

3.6 Bond metallic piping and structures gas lines, water lines and metallic building structures according to OESC requirements.

4.0 Install residential branch circuits according to the OESC, and company policies and procedures.

   4.1 Draw and label wiring and cable diagrams relevant to the branch circuit.

   4.2 Select and install cable based on the size of the load, and condition of use.

4.3 Select and install cable supports relevant to the size and type of cable.

4.4 Select and install boxes relevant to the size and type of cable, amount of conductors, outlet/device, and conditions of use.

4.5 Select and install fittings relevant to the size and type of cable.

4.6 Bond all non-current carrying metal materials to ground.

4.7 Select, install, wire, and terminate common residential switching devices, outlets and breakers.

GENERAL EDUCATION

This is not a General Education course.

PROGRAM OUTCOMES

This course contributes to the following Ministry of Colleges and Universities approved program learning outcomes (PLO):

Electrical Techniques

1. assist in the interpretation and preparation of electrical drawings including other related documents and graphics.

2. analyze and solve simple technical problems related to basic electrical systems by applying mathematics and science principles.

3. use and maintain test and instrumentation equipment.

4. assemble basic electrical circuits and equipment to fulfill requirements and specifications under the supervision of a qualified person.

5. assist in the installation and troubleshooting of basic electrical machines and associated control systems under the supervision of a qualified person.

6. assist in testing and troubleshooting electrical and electronic circuits, equipment, and systems by using established procedures under the supervision of a qualified person.

7. assist in the troubleshooting of control systems under the supervision of a qualified person.

8. use computer skills and tools to solve basic electrical related problems.

9. assist in conducting quality assurance procedures under the supervision of a qualified person.

10. assist in the preparation and maintenance of records and documentation systems.

12. apply health and safety standards and best practices to workplaces.

13. perform tasks in accordance with relevant legislation, policies, procedures, standards, regulations, and ethical principles.

14. apply basic electrical cabling requirements and install and test system grounding for a specified number of applications under the supervision of a qualified person.

15. identify problems and troubleshoot electrical systems under the supervision of a qualified person.

16. assist in the selection of electrical equipment, systems and components to fulfill the requirements and specifications under the supervision of a qualified person.

ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES

This course contributes to the following Ministry of Colleges and Universities approved essential employability skills (EES) outcomes:

1. Communicate clearly, concisely, and correctly in the written, spoken, and visual form that fulfils the purpose and meets the needs of the audience.

2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.

3. Execute mathematical operations accurately.

4. Apply a systematic approach to solve problems.

5. Use a variety of thinking skills to anticipate and solve problems.

6. Locate, select, organize, and document information using appropriate technology and information systems.

7. Analyse, evaluate, and apply relevant information from a variety of sources.

8. Show respect for the diverse opinions, values, belief systems, and contributions of others.

9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.

10. Manage the use of time and other resources to complete projects.

11. Take responsibility for one's own actions, decisions, and consequences.

EXTERNAL COURSE ACCREDITATIONS AND CONDITIONS

Successful completion of the Electrical Techniques Program Certificate is equivalent to the Apprenticeship Curriculum Standard Electrician Level 1: Construction & Maintenance 309A, Domestic & Rural 309C, Industrial 442A

COURSE EVALUATION

Evaluation Item	Weight
Projects	80%
Quizzes	20%

COURSE PASS GRADE

50

GRADING SYSTEM

A+:	90-100%	B+:	77-79%	C+:	65-69%	D:	50-54%	S - Satisfactory
A:	85-89%	B:	73-76%	C:	60-64%	F:	0-49%	I - Incomplete
A-:	80-84%	B-:	70-72%	D+:	55-59%			F- Repeat Course, included in GPA
								FS- Failure Supplemental
								FR- Repeat course, excluded from GPA

*For a complete chart of grades and descriptions, please see the Grading Policy.

LEARNING RESOURCES

Course Textbooks:

Required:

Title:	Electrical Wiring Residential Canadian Edition
Author:	Mullin/Branch/Gerolimon/Trineer/Granelli/Simmons
Publisher:	
Edition:	10th
Print ISBN:	9781778412868
eBook ISBN:	9781778414299

Title:	Ontario Electrical Safety Code (2021)
Author:	CSA Group
Publisher:	
Edition:	28th
Print ISBN:	
eBook ISBN:	9781778414299

Required: Safety Footwear (Green Patch) and Safety Glasses.

Access to:

Stable and consistent Internet service

Mobile computing device with the ability to install and run the latest: Internet browser (e.g.: Edge, Chrome, or Firefox); ilearn (Canadore's learning management system - D2L/Brightspace), Office 365 (desktop version); and remote learning software (e.g.: Microsoft Teams, Zoom and Echo360)

Mobile computing device speaker and microphone, or headphones with microphone

Mobile computing device camera, or web cam

Resources listed on the course outline support the achievement of learning outcomes, and may be used throughout the course to varying degrees depending on the instructor's teaching methodology and the nature of the resource.

Technology requirements - https://www.canadorecollege.ca/BYOD

The Harris Learning Library's staff can help you find resources to support your learning - www.eclibrary.ca

LEARNING ACTIVITIES

Lecture, Projects

DELIVERY MODE

This course may be delivered, in whole or in part, in a number of modalities, including In-Person, Remote (synchronous and/or asynchronous), hybrid, or Hyflex, as per accreditation and/or regulatory standards where appropriate. This information is identified on the course schedule (student and faculty).

RECORDING GUIDELINES

This class may be recorded by faculty of the College. Faculty will inform students when recording of the class commences and ceases. 'Recorded' means that the audio-visual and chat portions of the class will be recorded and then be stored on the College or vendor provider server. They will be made available to students, but only for the express and sole use of those registered in this course. If you have any questions or concerns about this recording, please contact your instructor or the College's privacy officer at privacy.officer@canadorecollege.ca. Full recording guidelines can be found at: https://cdn.agilitycms.com/canadore-college/academic-centre-of-excellence/Canadore%20Recording%20Guidelines.pdf

EXPERIENTIAL LEARNING

All full-time programs of study at Canadore College strive to provide students with the opportunity for experiential learning. This course provides students with an experiential learning opportunity through:

Workplace/Lab Simulation (EL)

ACADEMIC POLICIES

Canadore College is committed to the highest standards of academic integrity, and expects students to adhere to these standards as part of the learning process in all environments. The College's Academic Integrity policy seeks to ensure that all students understand their rights and responsibilities in upholding academic integrity and that students receive an accurate and fair assessment of their work. Please review the Academic Integrity policy (A-18) and other academic policies found on our website: https://www.canadorecollege.ca/about/policies.

COLLEGE POLICIES

• Protecting human rights in support of a respectful college community

For college policies please see: http://www.canadorecollege.ca/about-us/college-policies.

Accessibility Learning Services for Students with Disabilities - Student Success Services

Student Success Services provides comprehensive support to students. We aim to ensure that all students have equal access to educational opportunities and can succeed in their academic journey. Our services focus on reducing and eliminating barriers related to education through individualized accommodations and

support. If you are a student with a disability, we encourage you to register with Accessible Learning by completing the Student Success – Accessible Learning Services Form (https://canadorecollege-accommodate.symplicity.com/public_accommodation/).

For more detailed information about the services offered, please visit our webpage: Student Success Services - (https://www.canadorecollege.ca/support/student-success-services). To connect with Student Success Services email studentsuccessnow@canadorecollege.ca or call 705.474.7600 ext 5205.

FIRST PEOPLES' CENTRE:

A culturally safe environment offering CONFIDENTIAL student focused services, drop in or make an appointment to access:

- One on one counselling
- Elder in residence program
- Peer tutoring
- Peer mentorship
- Lunch & learn workshops on study skills, self-care, life skills
- Learning Resource Centre

Drop by our offices at C254 College Drive, W103 Commerce Court or call 705 474 7600 Ext. 5961 College Drive / 5647 Commerce Court.

https://www.canadorecollege.ca/experience/indigenous-student-experience

WAIVER OF RESPONSIBILITY

Every attempt is made to ensure the accuracy of this information as of the date of publication. The college reserves the right to modify, change, add, or delete content.

HISTORICAL COURSE OUTLINES

Students use course outlines to support their learning. Students are responsible for retaining course outlines for future use in applications for transfer of credit to other educational institutions.

ADDITIONAL DISCLAIMER NOTE

Experiential learning is available