

COURSE NAME: ELE100 Electrical Theory I

Credit Value: 1
Total Course Hours: 14
Prerequisite Course(s): None
Corequisite Course(s): None

COURSE DESCRIPTION

This course introduces students to basic electrical concepts and safety.

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, Treaty #10 in the Robinson Huron Treaty of 1850 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:

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| <p>1.0 Identify health and safety standards according to the Occupational Health and Safety Act.</p> <ul style="list-style-type: none">1.1 Explain the duties of employers, workers, and other persons.1.2 Recognize safe working conditions.1.3 Explain how to report hazardous conditions.1.4 Explain when a worker can refuse work.1.5 Explain how to report a work refusal.1.6 Describe how the Occupational Health & Safety Act protects workers from electrical hazards.1.7 Explain the effects of an electrical current on the human body, and the factors that affect the intensity of a shock.1.8 Explain the procedures for the safe handling, storage, and disposal of hazardous materials utilizing the Workplace Hazardous Materials Information System. <p>2.0 Identify basic components found in DC electric circuits and describe their characteristic and purpose.</p> <ul style="list-style-type: none">2.1 Describe the relationship between atomic structure and electron flow. | <ul style="list-style-type: none">2.2 Name and explain the principles of operation of common sources of EMF.2.3 Identify units of measure and symbols pertaining to DC electricity.2.4 Describe the requirements for a simple electrical circuit. <p>3.0 Explain the various types of resistors used in D.C circuits.</p> <ul style="list-style-type: none">3.1 Define the term Resistance and identify its letter symbol.3.2 Define the term Ohm and identify the unit abbreviation.3.3 List types of materials for different resistors and how it relates to resistance values.3.4 Calculate the size and tolerance of a resistor using the resistor colour code.3.5 List the specific power ratings for carbon resistors.3.6 Define a power rheostat and potentiometer. |
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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

2. analyze and solve simple technical problems related to basic electrical systems by applying mathematics and science principles.
8. use computer skills and tools to solve basic electrical related problems.
10. assist in the preparation and maintenance of records and documentation systems.
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

70% - Assignments

30% - Final Test

PROGRAM SPECIFIC GRADING

Per College Grading System

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

No textbooks have been identified for this course.

Other Resources:

Required:

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

Readings, Videos, Discussions, and Self assessments

DELIVERY MODE

This course may be delivered, in whole or in part, in a number of modalities, including in class, online, hybrid, in a synchronous or asynchronous manner or a combination thereof, as per accreditation and/or regulatory standards where appropriate.

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>

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>.

STUDENT SUCCESS SERVICES - Your Success Matters!

Student Success Services provides student-focused services to facilitate students' success in their studies. Staff provide support by reducing and/or removing educational-related barriers through individualized accommodations and supports to students with disabilities.

Please visit our webpage to learn more: <https://www.canadorecollege.ca/support/student-success-services> or look for our events on social media.

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, E101 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.