HUMBER

Course Outline

Course Name: Canadian Electrical Code (ELEC 200)

Academic Period: 2023 - 2024

Faculty:

Faculty Availability:

Associate Dean:
Shaun Ghafari
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Schedule Type Code:

Land Acknowledgement

Humber College is located within the traditional and treaty lands of the Mississaugas of the Credit. Known as Adoobiigok [A-doe-bee-goke], the "Place of the Alders" in Michi Saagiig [Mi-Chee Saw-Geeg] language, the region is uniquely situated along Humber River Watershed, which historically provided an integral connection for Anishinaabe [Ah-nish-nah-bay], Haudenosaunee [Hoeden-no-shownee], and Wendat [Wine-Dot] peoples between the Ontario Lakeshore and the Lake Simcoe/Georgian Bay regions. Now home to people of numerous nations, Adoobiigok continues to provide a vital source of interconnection for all.

Equity, Diversity and Inclusion Statement

Humber College and the University of Guelph-Humber (Humber) are leaders in providing a learning, working and living environment that recognizes and values equity, diversity and inclusion in all its programs and services. Humber commits to reflect the diversity of the communities the College serves. Students, faculty, support and administrative staff feel a sense of belonging and have opportunities to be their authentic selves.

Faculty or Department	Faculty of Applied Sciences & Technology
Course Name:	Canadian Electrical Code (ELEC 200)
Pre-Requisites	none
Co-Requisites	none
Equates	none
Restrictions	none
Credit Value	3
Total Course Hours	42

Developed By:	Prepared By:	Approved by:
		Shaun Ghafari

Humber Learning Outcomes (HLOs) in this course.

The HLOs are a cross-institutional learning outcomes strategy aimed at equipping Humber graduates with the employability skills, mindsets, and values they need to succeed in the future of work. To explore all the HLOs, please consult the Humber Learning Outcomes framework.

- Sustainability
- Systems Thinking
- Critical Thinking
- Communication
- Professionalism

Course Description

Students explore the Ontario Electrical Safety Code and corresponding safety standards for the installation and maintenance of electrical systems. The students are expected to understand electrical construction in commercial and industrial settings as well as to learn different aspects of electrical estimating and safety.

Course Rationale

The knowledge of the electrical safety code is an essential part of electrical specialist's education. This course prepares the students for the proper use, maintenance and design of any electrical equipment and controls. Students are expected to use the safety code in further control design related courses.

Course Learning Method(s)

- Problem Based Learning (PBL)
- Lecture

Learning Outcomes

- Identify general appreciation of inspection and certification by pertaining to electrical installations and products.
- Apply conduit, box fill tables and conductor versus amp rating tables by distinguishing types of insulated conductors, size and capacity of flexible cords
- Explain the purpose of grounding and bonding in electrical installations by considering their differences and applications.
- Identify different wiring methods by determining the conductor suitability for various conditions.
- Identify the general requirements, protective and control devices that are required to be provided for electrical apparatus and ungrounded conductors.
- Categorize hazardous locations by systematizing the electrical equipment rating for such locations.
- Explain the use of conduits and conductors, panels, transformers and lighting as it pertains to the commercials and industrial setting in Electrical Construction.
- Describe the technical terms pertaining to electric motors, wiring methods for electric motors and size supplying conductors by considering the overcurrent & overload protection for electric motors.
- Explain how to read electrical drawings and electrical symbols by considering the the role of the estimator and importance to an electrical contractor.

- Apply electrical safety in the workplace by considering the workplace hazardous material information and systems/personal protective equipment.

Assessment Weighting

Assessment	Weight
Final Exam	
Test 2	30%
In-class Activity	
Tutorial Assignments	20%
Quiz	
Quizzes	20%
Midterm Exam	
Test 1	30%
Total	**100%**

Modules of Study

Module	Course Learning Outcomes	Resources	Assessments
ESA/General Rules	• Identify general appreciation of inspection and certification by pertaining to electrical installations and products.	Textbook (Section 2)	• Test 1 • Quizzes • Tutorial Assignments
Conductors	• Apply conduit, box fill tables and conductor versus amp rating tables by distinguishing types of insulated conductors, size and capacity of flexible cords	Textbook (Section 4)	• Test 1 • Quizzes • Tutorial Assignments
Services, Circuit Loading, Grounding and Bonding	• Explain the purpose of grounding and bonding in electrical installations by considering their differences and applications.	Textbook (Section 6, 8 & 10)	• Test 1 • Quizzes • Tutorial Assignments
Wiring Methods	• Identify different wiring methods by determining the conductor suitability for various conditions.	Textbook (Section 12)	• Test 1 • Quizzes • Tutorial Assignments

Module	Course Learning Outcomes	Resources	Assessments
Protection and Control	• Identify the general requirements, protective and control devices that are required to be provided for electrical apparatus and ungrounded conductors.	Textbook (Section 14)	• Test 2 • Quizzes • Tutorial Assignments
Hazardous Locations	• Categorize hazardous locations by systematizing the electrical equipment rating for such locations.	Textbook (Section 18)	• Test 2 • Quizzes • Tutorial Assignments
Installation of Electrical Equipment	• Explain the use of conduits and conductors, panels, transformers and lighting as it pertains to the commercials and industrial setting in Electrical Construction.	Textbook (Section 26)	• Test 2 • Quizzes • Tutorial Assignments
Motors & Generators	• Describe the technical terms pertaining to electric motors, wiring methods for electric motors and size supplying conductors by considering the overcurrent & overload protection for electric motors.	Textbook (Section 28)	• Test 2 • Quizzes • Tutorial Assignments
Electrical Construction	• Explain how to read electrical drawings and electrical symbols by considering the the role of the estimator and importance to an electrical contractor.	Lecture Notes	• Test 2 • Quizzes • Tutorial Assignments
Electrical Safety in the Workplace	• Apply electrical safety in the workplace by considering the workplace hazardous material information and systems/personal protective equipment.	Lecture Notes	• Test 2 • Quizzes • Tutorial Assignments

Required Resources

CSA Group. *Ontario Electrical Safety Code* (Latest Ed.). Electrical Safety Authority

Supplemental Resources

Wildi, T. (2006). *Electrical Machines, Drives, and Power Systems*. (6th Ed.) Englewood Cliffs, N.J. Prentice-Hall.

Essential Skills

Section	Skills	Measurement	Details
Communication	• Reading • Writing • Speaking • Listening • Presenting	Reinforce and measure	• Communicate clearly, concisely, and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. Respond to written, spoken, or visual messages in a manner that ensures effective communication. • A combination of summative and formative assessments, such as tests, quizzes, and activities has been applied to evaluate the learners.
Numeracy	• Understanding and applying mathematical concepts and reasoning • Analyzing and using numerical data • Conceptualizing	Teach and measure	• Execute mathematical operations accurately. • A combination of summative and formative assessments, such as tests, quizzes, and activities has been applied to evaluate the learners.
Critical Thinking and Problem-Solving	• Analysing • Synthesizing • Evaluating • Decision-Making	Reinforce and measure	• Apply a systematic approach to solve problems. Use a variety of thinking skills to anticipate and solve problems. • A combination of summative and formative assessments, such as tests, quizzes, and activities has been applied to evaluate the learners.
Information Management	• Gathering and managing information • Selecting and using appropriate tools and technology for a task or project • Computer literacy	Reinforce and measure	• Locate, select, organize, and document information using appropriate technology and information systems. Analyze, evaluate, and apply relevant information from a variety of sources. • A combination of summative and formative assessments, such as tests, quizzes, and activities has been applied to evaluate the learners.
Interpersonal Skills	• Relationship management • Conflict resolution • Leadership	Reinforce and measure	• Show respect for diverse opinions, values belief systems, and contributions of others. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals. • A combination of summative and formative assessments, such as tests, quizzes, and activities has been applied to evaluate the learners.

Section	Skills	Measurement	Details
Personal Skills	• Managing self • Managing change and being flexible and adaptable • Engaging in reflective practice • Demonstrating personal responsibility	Reinforce and measure	• Manage the use of time and other resources to complete projects. Take responsibility for one's own actions, decisions, and consequences. • A combination of summative and formative assessments, such as tests, quizzes, and activities has been applied to evaluate the learners.

Prior Learning Assessment & Recognition (PLAR)

Prior Learning Assessment and Recognition (PLAR) is the formal evaluation and credit-granting process whereby candidates may obtain credits for prior learning. Prior learning includes the knowledge competencies and skills acquired, in both formal and informal ways, outside of post-secondary education. Candidates may have their knowledge, skills and competencies evaluated against the learning outcomes as defined in the course outline. Please review the Assessment Methods Glossary for more information on the Learning Portfolio assessment methods identified below.

The method(s) that are used to assess prior learning for this course may include:

- Challenge Exam (results recorded as a % grade and added to student's CGPA)
- Learning Portfolio (results reflected as SAT and not added to student's CGPA)
- Skills Test
- Interview

Please contact the Program Coordinator for more details.

Academic Regulations

It is the student's responsibility to be aware of the College Academic Regulations. The Academic Regulations apply to all applicants to Humber and all current students enrolled in any program or course offered by Humber, in any location. Information about academic appeals is found in the **Academic Regulations**.

Anti-Discrimination Statement

At Humber College, all forms of discrimination and harassment are prohibited. Students and employees have the right to study, live and work in an environment that is free from discrimination and harassment. If you need assistance on concerns related to discrimination and harassment, please contact the Centre for Human Rights, Equity and Inclusion or the Office of Student Conduct.

Accessible Learning Services

Humber strives to create a welcoming environment for all students where equity, diversity and inclusion are paramount. Accessible Learning Services facilitates equal access for students with disabilities by coordinating academic accommodations and services. Staff in Accessible Learning Services are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. If you require academic accommodations, contact:

Accessible Learning Services

North Campus: (416) 675-6622 X5090

Lakeshore Campus: (416) 675-6622 X3331

Academic Integrity

Academic integrity is essentially honesty in all academic endeavors. Academic integrity requires that students avoid all forms of academic misconduct or dishonesty, including plagiarism, cheating on tests or exams or any misrepresentation of academic accomplishment.

Disclaimer

While every effort is made by the professor/faculty to cover all material listed in the outline, the order, content, and/or evaluation may change in the event of special circumstances (e.g. time constraints due to inclement weather, sickness, college closure, technology/equipment problems or changes, etc.). In any such case, students will be given appropriate notification in writing, with approval from the Dean (or designate) of the School.

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See the **Humber Libraries website** for additional information regarding copyright and for details on allowable limits.
