

PHET 140 Electrical and Electronics

2 credits

An introduction and overview of Electrical and Electronics in the Heavy Equipment trade. Teach you about Electrical theory, Circuits, Magnetism, Test Equipment, Battery fundamentals and service, Wiring, Lighting Circuits, and Circuit Protection. Will include Basic Electronics as well as Electronic Control Systems.

Instructors

Kevin Wills, Dorsey Butz

Office Hours

7:30 to 3:00 Monday to Thursday, 7:30 to 11:30 Fridays.

Hours of Instruction: 53

May 11 to May 21, 2020– SEIC

7:30am to 3:00pm Monday –Thursday, 7:30am-11:30am Friday.

Required Resources:

ILM's 190104a, 190104b, 190104c, 190104d, 190104e, 190104f, 190104g, 190104h
Pens, pencils, eraser, lined paper

Course Outcomes:

Upon successful completion of the course, the student shall be able to:

- *Apply scientific principles to explain electrical theory.*
- *Identify electrical circuit types and circuit defects.*
- *Apply scientific principles to explain the theory of magnetism.*
- *Use electrical test equipment to measure electrical values and check circuit operation.*
- *Service, test and charge a lead-acid battery.*
- *Test and repair electrical circuits.*
- *Test discrete electronic components used in the trade.*
- *Describe the operation of basic computer-controlled systems.*

Evaluation:

Assignments & Quizzes	20%
Shop	30%
Final Exam (cumulative)	50%

A minimum pass is a grade of 65% (refer to Grading System below)

Grading System

Descriptor	4.0 Scale	Percent
Excellent	4.0	95 – 100
	3.7	90 – 94
Good	3.3	85 – 89
	3.0	80 – 84
	2.7	75 – 79
Satisfactory	2.3	70 – 74
	2.0	67 – 69
Minimum Pass **	1.7	65-66
	1.3	0 – 64
Failure	1.0	
	0.0	

NOTES: **A minimum pass is a grade of 65%

Proposed Schedule of Topics

- A. Electrical Theory**
- B. Electrical Circuits**
- C. Magnetism**
- D. Test Equipment**
- E. Battery Fundamentals and Service**
- F. Electrical Wiring, Lighting Circuits and Circuit Protection**
- G. Basic Electronics**
- H. Electronic Control Systems**

Please Note:

Date and time allotted to each topic is subject to change.

Performance Requirements**Student Responsibilities**

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College Credit Calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

Student Attendance

- Students may miss up to 18 hours (3 days) of program class time without penalty.
- Students missing more than 18 hours (3 days) of program class time may have their enrollment terminated.
- Each part of an hour missed from class will be recorded as 1 hour of missed time.
- Cell phone use in class is strictly prohibited. If caught with a cell phone during class time, the student will be asked to leave for the remainder of the day and will be docked those hours as missed time.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online tutorial found on ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate.

Specialized Supports

The Student Academic Support Services (SASS) department: Accessibility Services, Skill Centre and Wellness Services, work together to support student success at Keyano College.

Accessibility Services (CC167) supports student success through group and individualized instruction of learning, study and test taking strategies, and adaptive technologies. Students with documented disabilities, or who suspect a disability, can meet with the Learning Strategists to discuss accommodation of the learning barriers that they may be experiencing. Students who have accessed accommodations in the past are encouraged to visit our office at their earliest opportunity to discuss the availability of accommodations in their current courses. Individual appointments can be made by calling 780-791-8934

Skill Centre (CC119) provides a learning space where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff. Students visiting the centre have access to one-to-one or group tutoring, facilitated study groups, and assistance in academic writing. The Skill Centre's Peer Tutor program provides paid employment opportunities for students who have demonstrated academic success and want to share what they have learned. Tutoring is available free to any students registered at Keyano College on a drop in basis, from 9:00 am to 5:00 pm Monday through Friday. Additional evening hours are subject to tutor availability and are posted in the Skill Centre.

Wellness Services (CC260) offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges. Mental Health Coordinators offer a safe and confidential environment to seek help with personal concerns. The Mindfulness Room in CC260 is available as a quiet space for students to relax during regular office hours. Wellness Service welcomes students to participate in any of the group sessions offered throughout the academic year addressing such topics as Mindfulness and Test Anxiety. Individual appointments can be made by calling 780-791-8934.

Please watch your Keyano email for workshop announcements from our Student Academic Support Services team.