

Concepts of Electronics

Course Syllabus

Lexington High School
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Class Purpose

This course covering the electronics field. Gain a practical understanding of foundational electronic principles. Develop an ability to perform basic analyses, decisions and calculations related to electronic and circuits systems. Use common test equipment to analyze and troubleshoot electronic systems.

The class is also a great opportunity to learn, strengthen and apply knowledge in the following areas:

- Engineering
- Problem solving
- Tool use - common and no common tools
- Physics
- Math
- Communication skills

Objectives

1. Evaluate physical relationships between atomic structure and electronic function
2. Apply engineering notation to electronic calculations
3. Apply common electrical terms and labels such as amps, ohms, volts and watts
4. Compute electrical problems using Ohm's Law
5. Examine resistors for suitability in electronic applications
6. Demonstrate the proper use of the VOM meter
7. Demonstrate the ability to use series rules to calculate electronic values
8. Demonstrate the ability to use parallel rules to calculate electronic values
9. Demonstrate the ability to use series and parallel rules to calculate electronic values
10. Use industry methods to properly size electrical conductors

11. Determine different types of batteries and alternative power sources
12. Apply circuit to battery applications

Learning Modules

1. Electrical Terminology and Symbols
2. Basic Concepts of Electricity
3. Electrical Safety
4. Using a Digital Multimeter
5. Building the Electrical Trainer
6. Electrical Drawings
7. Resistance
8. Voltage Sources
9. Ohm's Law & The Simple Circuit
10. Power Calculations
11. DC Series Circuits
12. DC Parallel Circuits
13. DC Series - Parallel Circuits
14. Relays and Control Logic

Resources

Canvas CCC Course / Other printed materials

Grading

Tests/Quizzes (**50%**) + Projects (**30%**) + Homework/Activities (**20%**) = **100%**

Quarter 1 (**45%**) + Quarter 2 (**45%**) + Semester Final (**10%**) = **100%**

Late Work

All assignments have a due date. I expect all work to be turned in on time.

20 points will be deducted for every day it is late. After 4 days it will be counted as a "0%"

Classroom Expectations and Procedures:

- Come to class prepared (Charged chromebook, pencil, paper, etc.)
- Respect one another
- Listen wholeheartedly when others are speaking
- Speak with good purpose
- Be accountable for your actions
- Learn from failure

Beginning of Class:

- Place phones in backpack (No tolerance policy)
- Find your seat, take out supplies needed for class (CHARGED COMPUTER, pencil, etc.)
- When finished, sit quietly and wait for further instructions

During class:

- Actively participate in class
- Keep order
- Be respectful

End of Class:

- Clean up your area (paper on floor around you, your supplies, put extension cords away, etc.)
- Sit IN seat until the bell rings. DO NOT LINE UP AT THE DOOR!!!!
- Push in your chair and leave the room quietly