Introduction to Electricity

has been approved by The Los Angeles Department of Water and Power and the International Brotherhood of Electrical Workers, Local 18, as an equivalent to the **Hayden Electrical Course**.

Course Content

This course is designed to teach the fundamentals of electricity, including electrical safety, the basic principles of atomic structure, electrical quantities, static electricity, magnetism, induction, resistors, series circuits, parallel circuits, and combination circuits. Resistive circuits will be analyzed using Ohm's Law, The Power Equation and Kirchhoff's Voltage and Current Laws. In addition, the course offers a study in operating principles of electrical power systems, the theory of AC generators and motors, load calculations, efficiencies, power factor correction, and calculations related to these theories.

Structure, Duration, & Time

The course contains 16 Module, with a completion target of 18-24 weeks. This course is self-paced and delivered online. Participants view recorded multimedia lectures and tutorials, and complete Knowledge Checks to assess whether they have mastered the material sufficiently to take the Module Quizzes and comprehensive exams.

About this Course

This self-paced online course will introduce basic electrical concepts including charge, voltage, current, energy and power. The class is free and open to anyone interested in pursuing a career in various electrical trades. Taking the course will also help participants to meet minimum requirements to apply for several positions at the Los Angeles Department of Water and Power (LADWP). For more information on these positions:

Direct Link: Positions

Navigate:

1. Visit: https://per.lacity.org/
2. Click the **City Jobs Box.**
3. Scroll & click **Exam Notification/Past Bulletins**
4. In the search bar, type **Hayden**.

For more information on a career with LADWP:

- **Direct Link:** LADWPCareers

Course Registration

Register for class at:
https://tinyurl.com/ElectricityClass

Outline

1. Safety
2. Atomic Structure
3. Electrical Quantities and Ohm's Law
4. Static Electricity
5. Magnetism
6. Electromagnetism
7. Resistors
8. Series Circuits
9. Parallel Circuits
10. Combination Circuits
11. Mathematics & Electricity
12. Inductance in AC Circuits
13. AC Resistive-Capacitive Series & Parallel Circuits
14. AC Resistive-Inductive-Capacitive Circuits
15. AC Single-Phase Transformers
16. Three-Phase Circuits