

**Virginia Western Community College**  
**ELE 110**  
**Home Electric Power**

**Prerequisites**

ELE 133 co-requisite

**Course Description**

Covers the fundamentals of residential power distribution, circuits, panels, fuse boxes, breaker and transformers. Includes study of the national electrical code, purpose, and interpretation.

**Semester Credits: 3 Lecture Hours: 2 Lab/Clinical/Internship Hours: 2**

**Required Materials****Textbook:**

Mullins and Simmons, Electrical Wiring Residential 18th Edition. (w/6 Prints), ISBN: 9781285170954

**Other Required Materials:**

Click here to enter text.

**Course Outcomes**

- At the completion of this course, the student should be able to:
- Give the students a basic understanding of wiring.
- Understanding of conductor sizing.
- Understanding of principles of grounding.
- Understanding of how a service is installed.
- Understanding of over current protection.
- Ability to calculate load for single-family dwelling.
- Ability to use National Electrical Code in the wiring and installation of s single-family dwelling.

## Topical Description

Week	Topic	Text (Unit)
1	Course Introduction and Class Policies	
2	General Information for Electrical Installations	1
3	Electrical Symbols and Outlets Determining the Required Number and Location of Lighting and Small Appliance Circuits	2 3a
4	Lighting and Small Appliance Circuits (continued) Conductor Sizes and Types. Wiring Methods. Wire Connections. Voltage Drop, and Neutral Sizing for Services Switch Control of Lighting Circuits, Receptacle Bonding, and Induction Heating Resulting from Unusual Switch Connections	3b 4 5a
5	Switch Control of Lighting Circuits, Receptacle Bonding, and Induction Heating Resulting from Unusual Switch Connections (continued)	5b
6	Ground-Fault Circuit Interrupters, Arc-Fault Circuit Interrupters,	6a
7	Transient Voltage Surge Suppressors, Immersion Detection Circuit Interrupters, and Appliance Leakage Detectors	6b
8	Service-Entrance Equipment	27, 29
9	Grounding	6
10	Overcurrent and Surge Protection Devices	28
11	Lighting Fixtures and Branch Circuits	7 - 22
12	Lab Projects 1—use text as reference	7 - 22
13	Lab Projects 2—use text as reference	7 - 22
14	Lab Projects 3—use text as reference	7 - 22
15	Exam Review Lab: Disassemble Wiring Lab Components	
16	Final Exam	

## Notes to Instructors

- Instructors should notify the program head at least a day in advance for any special accommodations or materials that will be needed for class.