

Virginia Western Community College

ELE 110

Home Electric Power

Prerequisites

None

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 20th Edition. ISBN: 978-0357366479

Other Required Materials:

Safety Glasses

Course Outcomes

At the completion of this course, the student should be able to:

- Understand basic wiring practices.
- Understand conductor sizing.
- Understand the principles of grounding.
- Understand how a service is installed.
- Understand over-current protection.
- Calculate load for a single-family dwelling.
- Use National Electrical Code in the wiring and installation of single-family dwellings.

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.

[ADA Statement](#) (PDF)

[Title IX Statement](#) (PDF)