



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION:** Workforce Development

**COURSE:** ELE 1206 Electrical Wiring

Date: Spring 2024

Credit Hours: 2

*Complete all that apply or mark "None" where appropriate:*

Prerequisite(s): None

Enrollment by assessment or other measure?  Yes  No

If yes, please describe:

Corequisite(s): None

Pre- or Corequisite(s): None

Consent of Instructor:  Yes  No

Delivery Method:	<input checked="" type="checkbox"/> Lecture	1 Contact Hours (1 contact = 1 credit hour)
	<input type="checkbox"/> Seminar	0 Contact Hours (1 contact = 1 credit hour)
	<input checked="" type="checkbox"/> Lab	2 Contact Hours (2-3 contact = 1 credit hour)
	<input type="checkbox"/> Clinical	0 Contact Hours (3 contact = 1 credit hour)

Offered:  Fall  Spring  Summer

### **CATALOG DESCRIPTION and IAI NUMBER (if applicable):**

This course will cover the skills necessary to perform most residential and light industrial wiring. These skills include installing and wiring breaker boxes, outlets and switches (single, 3-way, and 4-way) and pulling wire through conduit after bending and installation. The installation of telephone and computer network wiring will also be discussed.

## **ACCREDITATION STATEMENTS AND COURSE NOTES:**

None

## **COURSE TOPICS AND CONTENT REQUIREMENTS:**

- Unit 1. Introduction to the National Electrical Code®  
Introduction, TOOLS, lab, components
- Unit 2 Definitions  
Electrical Safety, Current NEC Manual (PDF) and Code Check overview
- Unit 3 Boxes and Enclosures  
Services entry and conductors /Electrical Symbols and Outlets
- Unit 4 Cables  
Electrical Symbols and Outlets/Working spaces
- Unit 5. Raceways and Conductors
- Unit 6. General Provisions  
Load calculations
- Unit 7. Specific Provision
- Unit 8. Load Calculations  
Grounding and bonding
- Unit 9. Services and Electrical Equipment
- Unit 10. Comprehensive Provisions  
Panels and multi circuits
- Unit 11. Load Calculations
- Unit 12. General Provisions  
AFCI/GFCI requirements
- Unit 13. Non dwelling Load Calculations
- Unit 14. Services, Feeders, and Equipment  
Branch circuit Outlets / Lighting circuits
- Unit 15. Hazardous (Classified) Locations
- Unit 16. Health Care  
Appliances and cables
- Unit 17. Industrial Locations  
Raceway and Conduit fill
- Unit 18. Special Occupancies  
Old wiring and swimming pools
- Unit 19. Specific Equipment

## **INSTRUCTIONAL METHODS:**

Lecture

## **EVALUATION OF STUDENT ACHIEVEMENT:**

Quizzes, Tests, labs

## **INSTRUCTIONAL MATERIALS:**

### **Textbooks**

Illustrated Guide to the National Electrical Code, 8th Edition Charles R. Miller ISBN-10: 0357371526 | ISBN-13: 9780357371527

## **Resources**

## **LEARNING OUTCOMES AND GOALS:**

### **Institutional Learning Outcomes**

- 1) Communication – to communicate effectively.
- 2) Inquiry – to apply critical, logical, creative, aesthetic, or quantitative analytical reasoning to formulate a judgement or conclusion.
- 3) Social Consciousness – to understand what it means to be a socially conscious person, locally and globally.
- 4) Responsibility – to recognize how personal choices affect self and society.

### **Course Outcomes and Competencies**

Upon completion of the course, the students will be able to:

1. Verbally explain and apply electrical Lock-out Tag-out procedures.
2. Identify materials and tools used in electrical wiring.
3. Read and understand electrical blueprints.
4. Understand proper wiring methods by following the National Electrical Code.
5. Identify electrical symbols and their meaning.
6. Students will be able to apply the National Electric Code for any Industrial, Commercial or Residential project.
7. Students will be able to calculate the service load of an industrial or residential dwelling.
8. Students will be able to install and wire a service panel professionally.
9. Students will be able to calculate install and wire any lighting circuit according to the National Electric Code.
10. Students will be able to calculate and wire a single and three-way switch according to the National Electric Code.
11. Students will be able to calculate, bend and install various types of raceways (conduit, BX, Flexible Metal Conduit).