



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION:** Workforce Development

**COURSE:** ELE1206 Electrical Wiring

Date: Fall 2022

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): GNT1208 or Instructor Consent

Consent of Instructor:  Yes  No

Delivery Method:  **Lecture**      **1 Contact Hours** (1 contact = 1 credit hour)  
 **Seminar**      **0 Contact Hours** (1 contact = 1 credit hour)  
 **Lab**      **2 Contact Hours** (2-3 contact = 1 credit hour)  
 **Clinical**      **0 Contact Hours** (3 contact = 1 credit hour)  
 **Online**  
 **Blended**  
 **Virtual Class Meeting (VCM)**

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

AFCl/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

None

## 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)