



# Western Nevada College

## Course Outline

ELM 131B National Electric Code (NEC)

Development/Revision Date: 11/3/2022 by Deb Conrad

---

**Number of Credits: 3**

**Transferability of Course within Nevada:** May not transfer towards an NSHE bachelor's degree.

**Prerequisites:** Must be admitted to an approved apprenticeship program.

---

### Course Description

Survey of the National Electric Code (NEC) and its application to the safe installation of electrical conductors and equipment.

### Objectives

This course will address the National Electrical Code (NEC) and, upon completion of the course, students will be able to demonstrate a variety of safe installation practices, perform calculations associated with required wire size, circuit protection and electricity cost

### Linkage to WNC's Institutional Learning Outcomes

The course objectives relate to Student Learning Outcome 7, Career Preparation: Identify, describe, and apply information in the discipline or career area of their choice sufficient for further study and/ or demonstrate competencies required to succeed in the workplace.

### Student Learning Outcomes

Students who complete this class should be able to:

1. State the purpose of the National Electrical Code
2. List the general requirements for electrical installations
3. Layout a branch circuit and feeder circuit according to NEC requirements
4. Calculate and select the correct wire size for a branch circuit
5. Calculate and select the correct circuit protection for a branch circuit
6. Calculate and select the correct wire size for a feeder circuit
7. Calculate and select the correct circuit protection for a feeder circuit
8. Calculate the conduit size for various wiring configurations
9. Calculate conductor size for various ampacities
10. Determine the required size of grounding and bonding wires

### Instructional Methods and Modes



Methods of instruction for this course may include: student reading assignments, face-to-face lecture of material, hands-on lab training and on-the-job training.

### Assessment Methods

Assessment methods will include classroom discussion, assignments, and tests which will challenge the student's understanding of the content and prepare the student to complete the hands-on labs confidently and safely, competency completion through hands-on practice and troubleshooting during lab sessions and on-the-job training, and passing the final exam.

© 2023. This work is licensed under a [CC BY 4.0 license](https://creativecommons.org/licenses/by-sa/4.0/).



- This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format, so long as attribution is given to the creator. The license allows for commercial use. If you remix, adapt, or build upon the material, you must license the modified material under identical terms.
- CC BY-SA includes the following elements:
  - BY  – Credit must be given to the creator
  - SA  – Adaptations must be shared under the same terms