

**College of San Mateo**  
**Official Course Outline**

1. **COURSE ID:** BLDG 720    **TITLE:** Electrical Inspection I  
**Units:** 3.0 units    **Hours/Semester:** 48.0-54.0 Lecture hours; 96.0-108.0 Homework hours; 144.0-162.0 Total Student Learning hours  
**Method of Grading:** Grade Option (Letter Grade or Pass/No Pass)
  
2. **COURSE DESIGNATION:**  
**Degree Credit**  
**Transfer credit:** none
  
3. **COURSE DESCRIPTIONS:**  
**Catalog Description:**  
Overview of the National Electrical Code with an emphasis on residential installations. The course covers each aspect of residential wiring from the calculations required to size an electrical service to the installation of receptacle outlets and lighting. The course will highlight any changes that have occurred from the previous code cycles.
  
4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**  
Upon successful completion of this course, a student will meet the following outcomes:
  1. Describe the required location of residential receptacles and lighting outlets.
  2. Discuss the principles of grounding and bonding of electrical equipment.
  3. Calculate a residential load calculation for a single-family dwelling.
  
5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**  
Upon successful completion of this course, a student will be able to:
  1. Know the required location of residential receptacles and lighting outlets.
  2. Understand the principles of grounding and bonding of electrical equipment.
  3. Perform a residential load calculation for a single-family dwelling.
  
6. **COURSE CONTENT:**  
**Lecture Content:**
  1. Electrical Theory
  2. General Rules and Definitions
  3. Service, Outside Feeders, Temp Installations
  4. Grounded (Neutral), Branch Circuits & Feeders
  5. OCPD and Grounding
  6. Load Calculations
  7. Wiring Methods and Cables
  8. Conductors and Conduit
  9. Cabinets, Boxes and Panelboards
  10. Wiremold and Switches
  11. Cords, Fixture Wire, Receptacles and Luminaires
  12. Appliances and Air Conditioning
  13. Pools and Spas
  
7. **REPRESENTATIVE METHODS OF INSTRUCTION:**  
Typical methods of instruction may include:
  - A. Lecture
  - B. Activity
  - C. Discussion
  - D. Other (Specify): Hands-on demonstrations, augmented by audio and visual aids.
  
8. **REPRESENTATIVE ASSIGNMENTS**  
Representative assignments in this course may include, but are not limited to the following:  
**Writing Assignments:**  
Homework problems for application of the information from critical sections of the electrical code; problems to solve related to calculations for loads, box fills, conduit fills, etc.

**Reading Assignments:**

Reading assignments from critical sections of the electrical code.

**9. REPRESENTATIVE METHODS OF EVALUATION**

Representative methods of evaluation may include:

- A. Class Participation
- B. Exams/Tests
- C. Quizzes

**10. REPRESENTATIVE TEXT(S):**

Possible textbooks include:

- A. Holt, M.. *Illustrated Guide to Understanding the National Electrical Code, Workbook*, 2023 ed. Leesburg: Mike Holt Enterprises, 2023
- B. National Fire Protection Association. *National Electrical Code*, 2017 ed. Quincy: National Fire Protection Association, 2017

**Origination Date:** October 2023

**Curriculum Committee Approval Date:** November 2023

**Effective Term:** Fall 2024

**Course Originator:** Brent Hipsher