

I. COURSE DESCRIPTION:

- A. Department Information:
 - Division: Technical
 - Department: Welding
 - Course ID: INSPEC 014B
 - Course Title: Advanced Construction Inspection: National Electrical Code
 - Units: 3
 - Lecture: 3 Hours
 - Laboratory: None
 - Prerequisite: INSPEC 012

- B. Catalog and Schedule Description:
 - The interpretation and use of the National Electrical Code.

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES FOR STUDENTS:

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

- A. Evaluate wiring methods.
- B. Verify grounding systems.
- C. Size main services.
- D. Identify hazardous conditions.
- E. Size system components.
- F. Write correction notices for non-complying elements.

IV. COURSE CONTENT:

- A. Wiring design
- B. Feeders
 - 1. Branch circuits
 - 2. Grounding
 - 3. Over current protection
- C. Non-metallic wiring and methods
 - 1. Conductors
 - 2. Open wiring insulation
 - 3. Knob and tube wiring
 - 4. Service entrance conductors
 - 5. UF and UFEE cable
- D. Metallic wiring and methods
 - 1. Rigid metal conduit
 - 2. EMT conduit
 - 3. Flexible metal conduit
 - 4. Surface raceways
- E. Termination boxes, switchgears, and power control
 - 1. Boxes and fittings
 - 2. Cabinets and output boxes
 - 3. Disconnecting switches
 - 4. Switch and panel boards
 - 5. Transformers and vaults
 - 6. Storage batteries
- F. Appliances
 - 1. Branch circuits
 - 2. Special requirements
- G. Motors and generators
 - 1. Branch circuits
 - 2. Over current protection

- 3. Disconnecting means
- H. Hazardous locations
 - 1. Classification of areas
 - 2. Wiring requirements
- I. Special equipment
 - 1. Emergency equipment
 - 2. Remote control circuitry
 - 3. Outside wiring
- J. Lighting fixtures and lamp holders
 - 1. Specifications
 - 2. Wiring
 - 3. Supports

V. METHODS OF INSTRUCTION:

- A. Directed discovery discussions, lectures and video viewing
- B. Instructor/student conferences to discuss specific construction problems
- C. Students will view videos of active construction sites and write correction notices for code compliance.

VI. TYPICAL ASSIGNMENTS:

- A. Do chapter exercise that identifies code required location of outlets in a residence.
- B. Do exercise to determine minimum amperes for service at a residence.

VII. EVALUATION(S):

- A. Methods of Evaluation:
 - 1. Graded assignments - Each chapter exercise must be completed and a satisfactory grade received to advance to the next exercise.
 - 2. Mid-term examination
 - 3. Final examination
- Typical Questions:
 - a) Explain the code required minimum number of circuits and their dedication for a single-family dwelling.
 - b) Explain the required working clearances for a 100 Amp service.

San Bernardino Valley College
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- B. Frequency of Evaluation:
 - 1. Weekly graded assignments
 - 2. One mid-term examination
 - 3. One final examination

VIII. TYPICAL TEXT(S):

National Electrical Code, National Fire Protection Association, Quincy, MA, 2000
Student Workbook for the National Electrical Code, National Fire Protection Association, Quincy, MA,
2000

IX. OTHER SUPPLIES REQUIRED OF STUDENTS:

Three-ring binder