

COURSE OUTLINE **Electrical Code - Masters**

Course Description

ET 113. Electrical Code - Masters. 3 hours credit. Prerequisite: The student should have a minimum of two years experience in the electrical trade and/or meet the governing authority's requirement to take the Experiour four-hour, 100 question standard masters examination. This course will enable the student to develop the necessary skills to successfully complete the Experiour four-hour masters 100 question examination. The course will identify and examine all topics on the masters examination.

Course Relevance

The student will be able to utilize the national electrical code correctly and to advance professionally.

Required Materials

Henry, T. (2008). *Calculations for the electrical exam*. Orlando, FL: Tom Henry Co.

Henry, T. (2008) *Journeyman questions and answers – 2008 Code Book*. Orlando, FL: Tom Henry Co.

2008 National Electrical Code Book

Learning Outcomes

The intention is for the student to be able to

1. Skillfully use the current National Electrical Code Book
2. Pass the four-hour 100 question standard electrical masters examination

Primary Learning PACT Skills that will be DEVELOPED and/or documented in this course

Through the student's involvement in this course, he/she will develop his/her ability in the following primary PACT skill areas:

1. Critical Thinking
 - Through the study of the National Electrical Code Book, the student will be able to apply the mandated electrical codes.

Secondary skills (developed but not documented):

Problem Solving
Reading

Major Summative Assessment Task(s)

These learning outcomes and the primary Learning PACT skills will be demonstrated by

1. The student will compile a portfolio of timed quizzes that will prepare the student to take the Experio examination.
2. Completion of a final exam modeled after the Experio 100 question masters exam which will demonstrate the use of the National Code Book.

Course Content

- I. Themes – Key recurring concepts that run throughout this course:
 - A. To provide an electrical system that is free from hazard
- II. Issues – Key areas of conflict that must be understood in order to achieve the intended outcome:
 - A. To apply the National Electrical Code correctly
- III. Concepts – Key concepts that must be understood to address the issues:
 - A. How to apply the electrical code in conjunction with authority having local jurisdiction
 - B. Must understand the basic concept of an electrical system
- IV. Skills/Competencies – Actions that are essential to achieve the course outcomes:
 - A. Reading
 - B. Analytical thinking
 - C. Memorization of terms
 - D. Application of concepts

Learning Units

- I. Ohm's Law
 - A. Basic equations
 - B. Series circuits
 - C. Parallel circuits
- II. Branch circuits
 - A. Residential
 - B. Commercial
- III. Raceway fill
 - A. Boxes
 - B. Conduits
- IV. Conductors
 - A. Ratings
 - B. Terminations
- V. Ampacity
 - A. Current factors
 - B. Temperature factors
 - C. Load factors
- VI. Demands
 - A. Cooking equipment

B. Commercial services

VII. Motors (multiple)

A. Entire circuit computations

1. Conductor sizing
2. Overcurrent protection
3. Overload protection

VIII. Continuous open book study

Learning Activities

Lecture, instructor-led class discussions, group study, various audio/visual aids, case studies.

Grade Determination

The student will be graded on assessment tasks, tests, daily work, and class participation