

# ELECTRICAL CONSTRUCTION & MAINTENANCE (ELEC)

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## **ELEC1111 | AC & DC Electrical Lab | Laboratory (5 Credits)**

Investigation and application of electronics and electrical alternating and direct current principles and theories utilizing electrical math, basic schematics, test equipment, circuit connections, and analysis techniques to identify and predict electrical and electronic component and circuit behaviors.

## **ELEC1113 | AC & DC Electrical Principles | Lecture (7 Credits)**

Examine electronics and electrical alternating and direct current principles and theories utilizing electrical math, basic schematics, and circuit analysis techniques to identify and predict electrical and electronic component and circuit behaviors.

**Corequisite(s):** ELEC1115

## **ELEC1114 | Introduction to the NEC | Seminar (1 Credit)**

Introduction to the National Electrical Code through investigation of the history to formulate a necessary base knowledge in which to develop basic skills and understanding of the NEC and how it applies to the electrical applications in the field.

## **ELEC1115 | Basic Skills of an Electrician | Lecture/Laboratory (2 Credits)**

Introduce basic skills utilized in the electrical industry through hands-on training in basic tool use and safety protocols. Identify professional development opportunities and required industry ethics to prepare for your electrical career.

**Corequisite(s):** ELEC1113

## **ELEC1211 | AC & DC Machines & Controls Lab | Laboratory (5 Credits)**

Investigation and analysis of AC and DC machines with both industrial and programmable logic control systems utilizing schematics and components to create and build electrical circuits with the inclusion of testing and troubleshooting procedures of equipment for a comprehensive analysis of industrial manufacturing systems.

## **ELEC1213 | AC & DC Machines Principles | Lecture (6 Credits)**

Examine AC and DC machine principles and theories and various control types with an emphasis on industrial manufacturing system calculations and analysis, including use of the National Electrical Code regulations for installations.

## **ELEC1214 | National Electrical Code-Equipment | Seminar (1 Credit)**

Explore the National Electrical Code requirements for the safe installation of equipment in general use through the interpretation and calculations of the requirements utilized in the electrical industry.

## **ELEC1215 | Plans & Estimates for Electricians | Lecture/Laboratory (2 Credits)**

Investigate construction drawings, specifications, estimates, and sequencing through the interpretation of various symbols, take-off methodologies, cost analysis, and planning utilized in the electrical industry.

## **ELEC2111 | Wiring & Electrical Systems Lab 1 | Laboratory (5 Credits)**

Implementation and installation of electric equipment, wiring methods and print reading for residential, light commercial and limited energy systems performed in a lab environment using proper safety practices and procedures.

## **ELEC2113 | Residential Wiring Electrical Principles | Lecture (6 Credits)**

Interpretation of the National Electrical Code and related calculations are examined and used to determine proper installation and use of wiring methods, devices, and equipment in accordance with the National Electrical Code with a focus on residential electrical systems.

**Prerequisite(s):** ELEC1111, ELEC1113, ELEC1114, And ELEC1115

## **ELEC2114 | National Electrical Code-Materials | Seminar (1 Credit)**

Examine the National Electrical Code requirements for the safe installation, maintenance and protection of electrical systems utilized in the construction and maintenance industry.

**Prerequisite(s):** ELEC1111, ELEC1113, ELEC1114, And ELEC1115

## **ELEC2115 | Building Automation Systems | Lecture/Laboratory (2 Credits)**

Analyze Building Automation Systems (BAS) containing Class 1, 2, and 3 wiring, remote control and signaling such as fire alarms, security, phone, and data through the identification of wiring methods and materials.

**Prerequisite(s):** ELEC1111, ELEC1113, ELEC1114, And ELEC1115

## **ELEC2211 | Wiring & Electrical Systems Lab 2 | Laboratory (5 Credits)**

Implementation of wiring methods for the installation of commercial, industrial, and renewable energy applications with an emphasis on various electrical systems utilizing blue prints, electrical schematics, estimating and take-off, and applicable industry standards along with the National Electrical Code within a laboratory environment.

## **ELEC2213 | Commercial Wiring Electrical Principles | Lecture (6 Credits)**

Examine the methods and materials used for the design, operation, estimation, layout, and installation of commercial and industrial electrical systems utilizing applicable industry standards along with the National Electrical Code.

**Prerequisite(s):** ELEC1111, ELEC1113, ELEC1114, And ELEC1115

## **ELEC2214 | National Electrical Code-Special Topics | Seminar (1 Credit)**

Examine the specialty topics in the National Electrical Code, including but not limited to special locations, equipment, and occupancies for the electrical industry.

**Prerequisite(s):** ELEC1111, ELEC1113, ELEC1114, And ELEC1115

## **ELEC2215 | Alternative Energy | Lecture/Laboratory (2 Credits)**

Investigate alternative energy methods, including common and uncommon power generation utilized in today's world.

**Prerequisite(s):** ELEC1111, ELEC1113, ELEC1114, And ELEC1115