NOCTI

Partner Credential Blueprint

Emerging Technician - Electrical

Codes: 9219/9220 Version: 01

General Assessment Information

Blueprint Contents

Test Type: The Emerging Technician credential in Electrical is just one more piece of the comprehensive credentialing solution offered by AMTEC. It provides a credible means of verifying the knowledge and skills expected by industry from an entry-level industrial electrical technician. This certification is awarded for successfully attaining the national cut-score established by subject matter experts in the field of Emerging Technician - Electrical. These credentials were developed by NOCTI which also serves as the third-party delivery partner for AMTEC.

Revision Team: This credential was developed by NOCTI for the Advanced Manufacturing Technical Education Collaborative (AMTEC). Subject matter experts were recruited by AMTEC from its education and industry connections.

CIP Code

47.0303 – Industrial Mechanics and Maintenance Technology

Learning that works for America CTE™

Career Cluster - Manufacturing

O*net™ in*it

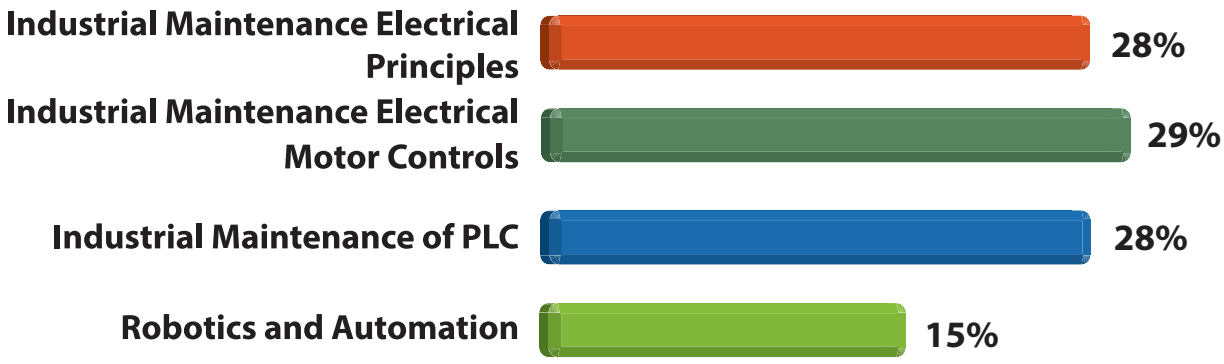
49-9041.00 – Industrial Machinery Mechanics

Written Assessment

This written assessment consists of questions to measure an individual's factual theoretical knowledge.

Administration Time: 2 hours
Number of Questions: 111
Number of Sessions: This assessment may be administered in one, two or three sessions.

Areas Covered



Specific Competencies and Skills Tested in This Assessment

Industrial Maintenance Electrical Principles

- Demonstrate knowledge of basic electrical safety principles
- Demonstrate basic knowledge of electricity
- Analyze and install electrical components and circuits
- Install/replace wire
- Operate electrical/electronic test equipment

Industrial Maintenance Electrical Motor Controls

- Install/maintain/troubleshoot limit and proximity switches
- Troubleshoot/calibrate/adjust and replace sensors and input devices
- Troubleshoot/repair/replace motors (AC and DC)
- Install/maintain/troubleshoot servo motors
- Install/maintain/troubleshoot VFD drives (Variable Frequency Drive)
- Install/repair/replace motor starters
- Interpret electrical schematics and relay logic

Industrial Maintenance of PLC

- Demonstrate knowledge of basic PLC systems
- Describe and connect PLC hardware
- Manipulate PLC software
- Interpret ladder logic programs
- Use sequential function chart programming
- Use PLC communication tools

Robotics and Automation

- Describe robot hardware and operation
- Describe Cartesian axes and coordinate system
- Set up, repair, and maintain robots and automated equipment
- Program robots
- Perform robot maintenance and PM
- Troubleshoot robots using error codes

Sample Questions

Potential difference refers to the energy difference in electrons between the two reference points measured in

A. amperes
B. coulombs
C. ohms
D. volts

Which of the following meters does NOT use power from the circuit it is measuring to make a reading?

A. voltmeter
B. ammeter
C. ohmmeter
D. wattmeter

The Hall Effect sensor detects

A. metallic objects
B. non-metallic objects
C. magnetic fields
D. non-magnetic fields

What does discrete I/O mean?

A. only ON-OFF devices
B. multiple switch devices
C. only ON devices
D. only OFF devices

Joint motion speed value is expressed as

A. a percentage of minimum speed
B. feet per second
C. meters per second
D. a percentage of maximum speed