NOCTI

Partner Credential Blueprint

Emerging Technician - Maintenance Mechanic

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Test Type: The Emerging Technician credential in Maintenance Mechanic 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 maintenance mechanic. This certification is awarded for successfully attaining the national cut-score established by subject matter experts in the field of industrial maintenance/mechatronics. 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: 47.0303 - Industrial Mechanics and Maintenance Technology

Career Cluster - Manufacturing

49-9041.00 - Industrial Machinery Mechanics
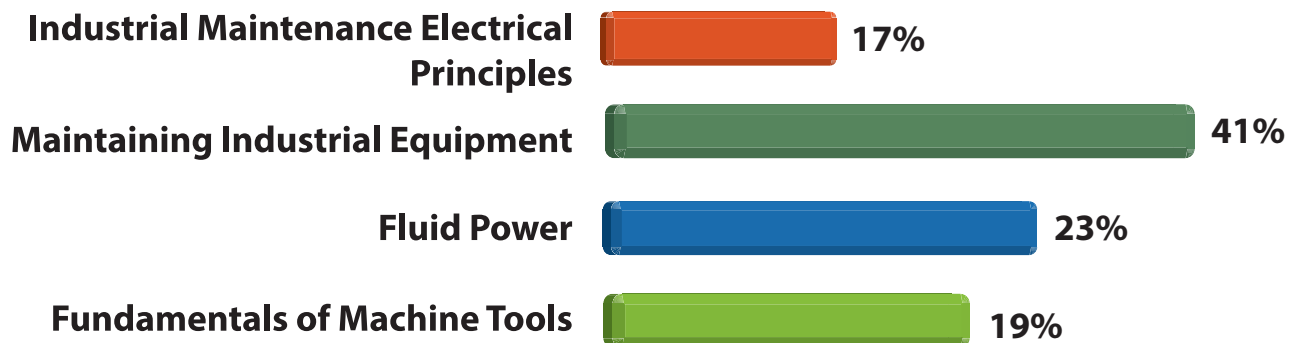
Written Assessment

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

Administration Time: 2 hours
Number of Questions: 118
Number of Sessions: This assessment may be administered in one, two or three sessions.

Areas Covered

Area	Percentage
Industrial Maintenance Electrical Principles	17%
Maintaining Industrial Equipment	41%
Fluid Power	23%
Fundamentals of Machine Tools	19%

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

Maintaining Industrial Equipment
- Demonstrate knowledge of mechanical principles
- Demonstrate basic safety related to industrial equipment
- Interpret mechanical drawings
- Perform preventative maintenance tasks
- Interpret and take action on oil analysis
- Maintain couplings
- Maintain oil and grease levels
- Change filters
- Collect oil samples for analysis
- Monitor floor management development system (5S)
- Perform alignment and balancing
- Perform equipment checks
- Perform infrared thermography
- Perform online motor current analysis
- Perform route-based vibration analysis
- Perform ultrasonic maintenance
- Troubleshoot/maintain chains and sprockets
- Troubleshoot/repair/replace bearings and bushings
- Troubleshoot/repair/replace brakes and clutches

Specific Competencies and Skills Tested in This Assessment

Maintaining Industrial Equipment (continued)
- Troubleshoot/repair/replace cams
- Troubleshoot/repair/replace gears
- Troubleshoot/repair/replace seals and o-rings
- Troubleshoot/repair/replace shafts
- Troubleshoot/repair/replace belts, sheaves/pulley
- Use Maintenance Database System (LMS, MAXIMO, PeopleSoft, etc.)

Fluid Power
- Demonstrate knowledge of basic fluid power principles
- Demonstrate safety related to hydraulic systems
- Maintain actuators, pumps, and accumulators
- Install/maintain valves
- Maintain fluid levels
- Replace filters on hydraulic/pneumatic systems
- Perform basic troubleshooting

Fundamentals of Machine Tools
- Demonstrate knowledge of basic machine tools, metal cutting, and safety
- Operate a drill press
- Operate various types of saws
- Use common hand and power tools
- Use measuring and layout tools
- Demonstrate knowledge of hazardous material handling and storage

Sample Questions

What is the lethal range of electrical current in the human body?
     A. less than 8mA
     B. from 8 to 20mA
     C. greater than 30mA
     D. greater than 200mA

The letter _____ is used to represent current flow in a circuit.
     A. I
     B. C
     C. R
     D. P

Which would be checked with an ohmmeter?
     A. voltage
     B. current
     C. continuity
     D. power factor

Flow rate is equal to volume divided by
     A. force
     B. gallons
     C. time
     D. pressure

File handles are used to
     A. protect the file
     B. extend the file life
     C. protect the file user
     D. extend the file