South Central College

# CMAE 1522 Quality Practices

## Course Outcome Summary

### Course Information

**Description** This course is designed to align with the National Skills Standard assessment and certification system for Quality Practices. The course curriculum is based upon federally-endorsed national standards for production workers. Emphasis is placed on continuous improvement concepts and how they relate to a quality management system. Students will be introduced to a quality management system and its components. These include corrective actions, preventative actions, control of documents, control of quality records, internal auditing of processes, and control of non-conforming product. (Prerequisites: None)

**Total Credits** 2

**Total Hours** 32

**Types of Instruction**

| Instruction Type | Credits/Hours |
|---|---|
| Lecture | 2/32 |

**Pre/Corequisites**

None

### Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

### Course Competencies

**1. Explain periodic or statistically based internal quality audit activities.**

**Learning Objectives**

Identify characteristics of correct and relevant audit data.
Discuss how to complete and forward relevant audit forms to the proper parties in a timely manner.
Describe assessment and documentation of quality standards.
Explain audit process and procedures, including scheduling.

**2. Describe checking and documentation of calibration of gages and other data collection equipment.**

**Learning Objectives**
Explain how to follow calibration schedule according to specifications.
Discuss the process of checking instrument certification by reviewing documentation and through observation during use.
Identify steps to recalibration - or ensure recalibration by someone else - for instruments out of calibration.

### 3. Explain continuous improvement.

**Learning Objectives**
Explain the role of observation, data review, and analysis in recognizing potential improvements.
Identify inclusion of measurable and data-driven benefits to the company, customers, and employees in suggestions.
Discuss proper procedures and documentation in regards to soliciting and receiving suggestions.

### 4. Discuss inspection of materials and product/process at all stages to ensure they meet specifications.

**Learning Objectives**
Identify scheduling and procedural considerations in regards to sampling and inspection.
Describe how to select and use inspection tools and procedures correctly.
Explain inspecting materials against specifications.
Discuss how to promptly identify products, processes, and materials that do not meet specifications.
Identify the role that spot-checks play in implementation of corrective actions.
Describe proper creation and reporting of inspection documentation.

### 5. Describe documentation of results of quality tests.

**Learning Objectives**
Discuss how to check data forms to ensure that they are complete and accurate.
Explain the process of evaluating and interpreting information correctly.
Discuss appropriate ways to share data with the correct parties.
Describe selection and use of correct analytical tools, including statistical process controls (SPC).
Identify proper storage process and time frames for reports.

### 6. Explain communication regarding quality problems.

**Learning Objectives**
Discuss review of quality problems with production operators.
Describe prompt communication of all quality problems with all appropriate parties.
Explain documentation and reporting in regards to quality problems and defect trends.

### 7. Identify corrective actions to restore or maintain quality.

**Learning Objectives**
Explain how to ensure corrective actions are identified and communicated promptly.
Identify recommendations for action that are clear, concise, and supported by data.
Discuss the need to make adjustments in a timely manner to eliminate deviations and bring the process back into control.
Discuss correct format for documentation regarding adjustments and follow-up product quality checks.
Describe implementation of corrective action/quality improvements in a standardized manner.

### 8. Explain how to properly record process outcomes and trends.

**Learning Objectives**
Explain appropriate standards in maintaining records on quality process.
Describe the charting of quality practice outcomes according to appropriate methods and standards.
Analyze data on quality process performance for accuracy.
Identify reporting procedures for quality performance data.
Explain the importance of comparing previous issues and solutions with current situations.

### 9. Identify fundamentals of blueprint reading.

**Learning Objectives**
Explain how to effectively create visualization of objects in a drawing.
Identify blueprint features correctly.

Read and comprehend dimensions of an object in a technical drawing.
Recognize the functions of sectional drawings.

**10. Use common measurement systems and precision measurement tools.**

**Learning Objectives**

Use and convert U.S. measurement and standard international metric systems.
Measure correctly using a machinist's rule and tape measure.
Identify part dimensions by measuring using a caliper and micrometer.
Use a computer to measure data from a digital gage correctly.

## SCC Accessibility Statement

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