Western Technical College

10196192 Managing for Quality

Course Outcome Summary

Course Information

Description	The learner applies the skills and tools necessary to implement and maintain a continuous improvement environment. Learners will demonstrate the application of a personal philosophy of quality, identifying all stakeholder relationships, meeting or exceeding customer expectations, a systems-focused approach, using appropriate models and tools, managing a quality improvement project, and measuring effectiveness of continuous improvement activities.
Career Cluster	Business Management and Administration
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	54

Textbooks

The Certified Quality Improvement Associate Handbook. 4th Edition. Copyright 2020. Westcott, Russel T. and Grace L. Duffy. Publisher: American Society for Quality. **ISBN-13**: 978-1-951058-12-8. Required.

Success Abilities

1. Cultivate Passion: Expand a Growth-Mindset
2. Live Responsibly: Embrace Sustainability
3. Refine Professionalism: Improve Critical Thinking
4. Refine Professionalism: Practice Effective Communication

Program Outcomes

1. Utilize quality strategies and tactics.
2. Apply effective leadership skills.
3. Perform supervisory management functions to achieve organizational objectives.

Course Competencies

1. Explore the history of quality.

Assessment Strategies

1.1. Written Product

Criteria

You will know you are successful when

1.1. you compare and contrast the quality approaches of Deming, Juran and Crosby.
1.2. you develop a composite definition of quality appropriate for the 21st Century that includes the elements of customer focus, continuous improvement and systematic approach.
1.3. you examine the history of quality; benchmarking, ISO, lean, six sigma.

Learning Objectives

1.a. Analyze the quality approach of Dr. W. Edwards Deming.
1.b. Analyze the quality approach of Phillip Crosby.
1.c. Analyze the quality approach of Dr. Joseph Juran.
1.d. Create a definition of quality appropriate for the 21st Century.
1.e. Create the history of quality.

2. Identify internal and external customer and supplier relationships.

Assessment Strategies

2.1. Written Product

Criteria

You will know you are successful when

2.1. you list the inputs and outputs for a given process.
2.2. you identify at least one external supplier and one external customer for an organization.
2.3. you list the inputs provided by the internal and external supplier.
2.4. you identify internal and external suppliers and internal and external customers for an organization.

Learning Objectives

2.a. Define internal and external customers.
2.b. Define internal and external suppliers.
2.c. Provide an example of internal and external customers and suppliers in a process.
2.d. Identify products and/or services provided to internal and external customers.

3. Identify different strategies for meeting or exceeding customer expectations.

Assessment Strategies

3.1. Written Product

Criteria

You will know you are successful when

3.1. you examine an appropriate strategy for identifying the needs of an internal or external customer.
3.2. you identify the consequences of failing to meet your internal and external customer's needs.
3.3. you list at least three features that would meet Kano's definition of basic, performance, delighters, reverse quality, and indifferent quality.

Learning Objectives

3.a. Examine the consequences of failing to meet customer expectations.
3.b. Identify strategies for identifying customer needs.
3.c. Provide examples of each of the three levels of customer satisfaction as defined by the Kano model.

4. Apply a systems focused approach to continuous improvement efforts.

Assessment Strategies

4.1. Written Product
4.2. Drawing/Illustration

Criteria

You will know you are successful when

4.1. you detail a process through the use of a flow chart.
4.2. you examine the impact of each persons role in the continuous improvement effort.
4.3. you examine sources of variability in a process.
4.4. you categorize sources of variability as common or special causes.
4.5. you compare detection versus prevention approaches to quality.

Learning Objectives

4.a. Identify the advantages of the prevention approach to quality versus the detection approach.
4.b. Differentiate between common cause and special cause sources of variation.
4.c. Illustrate a flowchart.

5. Examine various problem solving methodologies for continuous improvement.

Assessment Strategies

5.1. Written Product

Criteria

You will know you are successful when

5.1. you describe the current state of a process.
5.2. you identify the potential for process improvement or problem solving efforts.
5.3. you identify the stakeholders of process improvement or problem solving efforts.
5.4. You identify metrics for measurements of success of a future state.
5.5. You provide details for each step of a problem solving method.

Learning Objectives

5.a. Examine the need for a structured approach to continuous improvement.
5.b. Describe the purpose of each step of the Shewhart (PDCA/PDSA) cycle.
5.c. Describe the purpose of each step of the Seven Step Method.
5.d. Show the relationship between the two models of continuous improvement.

6. Demonstrate the seven basic quality tools.

Assessment Strategies

6.1. Written Product

Criteria

You will know you are successful when

6.1. you use appropriate statistical tools to describe the current state.
6.2. you use appropriate statistical tools to examine possible causes of problems or opportunities for improvement.
6.3. you use a stratification, histogram, cause and effects diagram, check sheet, control chart, Pareto chart and scatter diagram.
6.4. You interpret the results of seven tools.

Learning Objectives

6.a. Use a flowchart to illustrate the steps of a process.
6.b. Analyze a process output through a Pareto analysis.
6.c. Prepare a check sheet to collect data from a process.
6.d. Use a cause and effect diagram to explore possible causes to a problem.
6.e. Use a histogram as a means of displaying process output.
6.f. Capture process data using a run chart or control chart.
6.g. Evaluate the relationship between two variables using a scatter diagram.

7. Demonstrate the seven management and planning tools.

Assessment Strategies

7.1. written product

Criteria

You will know you are successful when

7.1. you use the appropriate management and planning tool(s) as part of the improvement process.

7.2. you demonstrate an affinity diagram, relationship diagram, tree diagram, matrix diagram, matrix data analysis, arrow diagram, process decision program chart.
7.3. you discuss the appropriate use of each tool.

Learning Objectives

7.a. Recognize each of the seven quality management and planning tools.
7.b. Use the affinity process to identify related groupings in a brainstorming session.
7.c. Interpret the causal relationship of several variables using an relationship diagraph.
7.d. Use a tree diagram to identify operational objectives for a given objective.
7.e. Illustrate a matrix diagram
7.f. Construct a matrix data analysis
7.g. Construct an arrow diagram
7.h. Construct a process decision program chart.

8. Examine the basics of statistics.

Assessment Strategies

8.1. written product

Criteria

You will know you are successful when

8.1. you identify the difference between nominal and ordinal data.
8.2. you calculate and discuss the meaning of standard deviation, mean, median and mode.
8.3. you examine the meaning and use of normal distribution.
8.4. You examine when to use mean, median and mode.

Learning Objectives

8.a. Define the three measures of central tendency.
8.b. Analyze the benefits and limitations of each measure of central tendency.
8.c. Examine non-normal distributions and potential causes.
8.d. Examine the implications of the Central Limit Theorem.
8.e. Review the difference between common cause and special cause variation.
8.f. Interpret control charts using the seven rules.
8.g. Differentiate between independent and dependent variables.

9. Examine lean prinicples

Assessment Strategies

9.1. Reflection

Criteria

You will know you are successful when

9.1. you identify examples of the 7 forms of waste within an organization
9.2. you apply the 5S process to an area.
9.3. you explore takt time and cycle time
9.4. you examine value added versus non-value added activities.
9.5. you examine standard work.

Learning Objectives

9.a. Describe the concept of lean systems and processes
9.b. Distinguish between value added and non value added activities
9.c. Describe the purpose behind lean
9.d. Accept the seven wastes.
9.e. Document the 5S process.