



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**QUALITY CONTROL & COST MANAGEMENT
MEC3493 3 Credit Hours**

Student Level:

This course is open to high school and post-secondary level students.

Catalog Description:

MEC 3493 - QUALITY CONTROL AND COST MANAGEMENT (3 hrs)

This course is designed to help the student increase their knowledge regarding fundamentals of quality control and cost management with emphasis on understanding what is meant by quality, how quality is achieved through continuous improvements and several statistical quality tools. Quality, as a direct function of cost management is also covered in this course.

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of quality control and cost management with emphasis on understanding what is meant by quality, how quality is achieved through continuous improvements and several statistical quality tools. Quality as a direct function of cost management is also covered in this course.

Learner Outcomes:

This course is designed to help the student increase their knowledge regarding fundamentals of quality control and cost management with emphasis on understanding what is meant by quality, how quality is achieved through continuous improvements and several statistical quality tools. Quality as a direct function of cost management is also covered in this course.

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.
- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.
- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

UNIT 1: How It All Began						
Outcomes: Upon completion of this unit, the student will be able to successfully understand reasoning for quality assurance.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain why companies adopted quality as a business tool.
						Explain how General Douglas MacArthur played a part in initiating quality as a business tool.
						Explain the roles of Shewhart, Deming, Juran, Sarasohn and Protzman in the move to quality.
						State why the United States resisted the move to quality in the 1950s and 1960s.
						Describe the creation of modern industrial production processes.

UNIT 2: The International Standards Organization

Outcomes: Upon completion of this unit, the student will be able to successfully understand the application of ISO standards

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Describe the history of the International Standards Organization (ISO)
						Explain the purpose of ISO registration.
						Explain the benefits of ISO registration.
						List some of the documents that must be in place for ISO registration.
						Explain the differences between TQM and ISO.
						Explain how ISO 2000 is different from ISO 9000.

UNIT 3: Total Quality Management

Outcomes: Upon completion of this unit, the student will be able to successfully understand TQM management techniques.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the methods of TQM.
						List the four major elements of TQM.
						List the importance of identifying the employee as a customer.
						List examples of the cost of quality.

UNIT 4: Employee Empowerment

Outcomes: Upon completion of this unit, the student will be able to successfully understand employee impact on management.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Write a definition of employee empowerment.
						Explain the difference between empowerment and development and involvement.
						List four ways to facilitate employee empowerment.
						Describe Maslow's hierarchy of needs.

UNIT 5: Personal Effectiveness

Outcomes: Upon completion of this unit, the student will be able to successfully understand the impact individuals have on management

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the importance of personal effectiveness.
						List five responsibilities for self-personal effectiveness.
						List four qualities employees would need to excel at their jobs.
						Explain how leaders promote an organization's mission and vision.
						List four organizational aspects of a human relations system.

UNIT 6: The Economics of Quality

Outcomes: Upon completion of this unit, the student will be able to successfully understand how quality impacts economic activity.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						List four economics issues that all national leaders face.
						List five goals of economic systems.
						Discuss the relationship of supply, demand, and price.
						Discuss the two factors that work together to determine the supply of a product or service.
						Explain how competition drives an economic system.
						Explain why governments regulate competition.
						List six factors that influence productivity.
						Discuss how information technology has affected the global marketplace.
						Explain why the customer has more “power” today, and how that power influences companies.

UNIT 7: Quality Tools

Outcomes: Upon completion of this unit, the student will be able to successfully understand the use of specific quality techniques.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Examine the function of quality tools.
						Explain the use of the brainstorming tool.
						Explain the use of the check sheet.
						Construct a check sheet.
						Explain the use of the run chart.
						Construct a run chart.
						Explain the use of the scatter diagram.
						Explain the use of the flowchart.
						Construct a scatter diagram and flowchart.
						Construct a pie chart.
						Explain the usefulness of the pie chart.
						Construct a cause-and-effect diagram.
						Explain the usefulness of the cause-and-effect diagram.
						Construct a histogram.
						Explain the usefulness of the histogram.
						Construct a Pareto chart.
						Explain the usefulness of the Pareto chart.
						Explain the usefulness of the control chart.

UNIT 8: Variation

Outcomes: Upon completion of this unit, the student will be able to successfully understand variation and its impacts.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						List the various causes of variation in the process industry.
						Explain the difference between common cause and special cause variation.
						Explain all aspects of statistical process control and demonstrate the application to a typical process industry.
						Explain why and demonstrate how process capabilities are conducted.

Projects Required:

As assigned

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

None

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy

Course Timeframe:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or

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an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability, which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.