Course Information Form (CIF)

Course Code: MFT 139
Course Title: Quality Assurance

Department: Applied Sciences and Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 15.0702
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-0-3
Credit Hour Distribution:

Lecture: 3	Lab: 0	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Basic concepts of quality. Application of probability, statistics, and sampling for quality control, process control, and failure analysis. Military standards and reliability documents will be used to evaluate product performance and identify causes of failure.

General Course Objectives

Students will be provided with the principles of quality and their application through statistical process control (SPC), standard quality requirements, and application in the work environment.

Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement into MAT 059

Prerequisites

None

Methods of Evaluation

Methods of evaluation to include at least 2 one-hour exams, 4 quizzes, and evaluation of the ability to use typical SPC forms.

Instructional Materials and Additional Supplies

Understanding Statistical Process Control, by Wheeler

Course Content

General Learning Outcomes (GLOs)

- Communication: Students will demonstrate the ability to read, write, listen, and speak effectively.
- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Introduction to What is Quality; History, Policy, and Japanese and American Current Practices	1. State the concept and principles of quality, including advances and current practices of Japanese and American systems.	2	0	0
Variation Funnel Experiment	1. Describe and give examples of variations. 2. Participate in an experiment which illustrates variation.	3	0	0
Data Summary Tools, Data Tables, Average and Dispersion Measuring, Histograms, Run Charts	1. Apply basic probability calculations using a calculator. 2. Use probability tables. 3. Apply basic probability concepts to production processes.	6	0	0
Data Sampling Methods	1. State the role of individual inspection and quality control auditing, the frequency with which it should be conducted, and methods. 2. Make sense of MIL SPEC methods, quality tables, and variable inspection rates.	9	0	0
Common Quality Measures	1. Interpret and use specifications including AWL/MilSpace.	4	0	0
Control Charts	1. Explain why the control chart works, the aspects of specifications and tolerances, and the normal distribution and fraction rejected with respect to areas under the normal curve.	9	0	0
Process Study	1. Evaluate a production process. 2. Identify the critical measurements that must be made using simulated measurement data sets. 3. Determine whether the process is within or out of control. 4. Recommend corrections at the appropriate times in the data graphing process. 5. Construct and read xbar and R charts, normal distribution, measures of central tendency, frequency of occurrence histograms, trend detection, and scatter diagrams.	12	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0