



**Course Title:** Principals of Quality

**Course Number:** QUA 114

**Credits:** 3

**CATALOG DESCRIPTION:** Quality control is an introductory course in quality conformance using tools and process that support and include statistical process control. Topics covered include an overview of TQM, Six Sigma Methodology, determining of process capabilities; estimations of processes standard deviation from sample data. Quality Control and Quality Assurance inspection plans and inspection sheets and documentation for traceability. Additionally the use of control charts and the calculation probability of simple events. Students will develop SPC TQM inspection plans and the additional applications of equipment calibration.

**COURSE OBJECTIVES:** At the conclusion of this course the student will be able to:

1. Understanding the processes involved in and what the importance of quality control means to all industries and including consumers
2. How quality Is controlled means and measurement, calibration , materials
3. How forecasting plays a role in cost efficient quality systems
4. Dealing with deviations and defects in a product, process, or systematic
5. The understanding of SPC, Metric system, ISO and ANSI NIST
6. The understanding of Geometric tolerance and its modifiers
7. The understanding of sampling, sampling of lots, chart reading and calculations.

**COURSE CONTENT**

1. Geometric Tolerance including Forms, Controls, Symbols, MMC and LMC
2. Demonstrate the ability to interpret drawing symbols on engineering drawings. Forms, Controls, Symbols, MMC LMC Metrology applications including Angular and Vernier scale Measurement
3. Metric System- Conversions and Practical shop uses Metric System Introduced 1980's Metric System verse English System Double Dimensioning on drawings Shop conversion formulas Reading Metric Micrometer and Vernier scales
4. Ability to understand what and why Statistical Process Control (SPC) TQM is used SPC ( Statistical Process Control ) Data gathering
5. Defects—What they tell us about our manufacturing operations and processes
6. Standards- NIST-
7. Charts- Bar graphs/ Pie charts / (Histograms) information gathering Control Limits application for this—What does it tell us
8. Six Sigma Methodology – Online White Belt