



## COURSE NUMBER

FHWA-NHI-134042

## COURSE TITLE

### Quality Assurance: Materials Control and Acceptance (4.5-Day)

This course provides participants with an understanding of the elements of a statistically based quality assurance program. It is also a prerequisite course for those pursuing training on the development of quality assurance specifications.

The course begins with an introduction to quality management and quality assurance. Through lectures, discussion, and workshops, participants learn techniques for collecting, organizing, analyzing, and interpreting data. Using the techniques taught in the course, participants assess the strengths, weaknesses, and risks of process control and acceptance plans. The course concludes with steps for successful implementation of quality specifications.

This course requires a solid foundation in basic mathematics and statistics.

The course topics include: Sampling Theory, Organization of Data, Analysis of Data, The Normal Distribution, Sources of Variability, Process Control, Acceptance Plans and Risks, and Percent within Limits Acceptance Plans.

## OUTCOMES

Upon completion of the course, participants will be able to:

- Define terms related to quality assurance.
- Identify the importance of organizing data and how to plot frequency histograms.
- Explain how a sample relates to the population, the relationship between single and multiple samples, including the myth of a single representative sample, and use of random stratified sampling tables.
- Calculate population and sample means, standard deviation, coefficient of variation, and control chart limits.
- Identify sources of variability and how to use precision and bias statements
- Use statistical process control charts.
- Identify the elements of acceptance plans and the strengths and weaknesses of acceptance plans based on sample means and percent within limits.
- Identify procedures for verification of contractor tests used in the acceptance decision.

## TARGET AUDIENCE

This course is appropriate for Federal, State, and local highway agency personnel involved in specification development. Typically this group consists of engineers and technicians in materials, construction, and research.

**TRAINING LEVEL:** Accomplished

**FEE:** 2013: \$650 Per Person; 2014: N/A

**LENGTH:** 4.5 DAYS (CEU: 2.7 UNITS)

**CLASS SIZE:** MINIMUM: 20; MAXIMUM: 30

**NHI Customer Service:** (877) 558-6873 • [nhicustomerservice@dot.gov](mailto:nhicustomerservice@dot.gov)