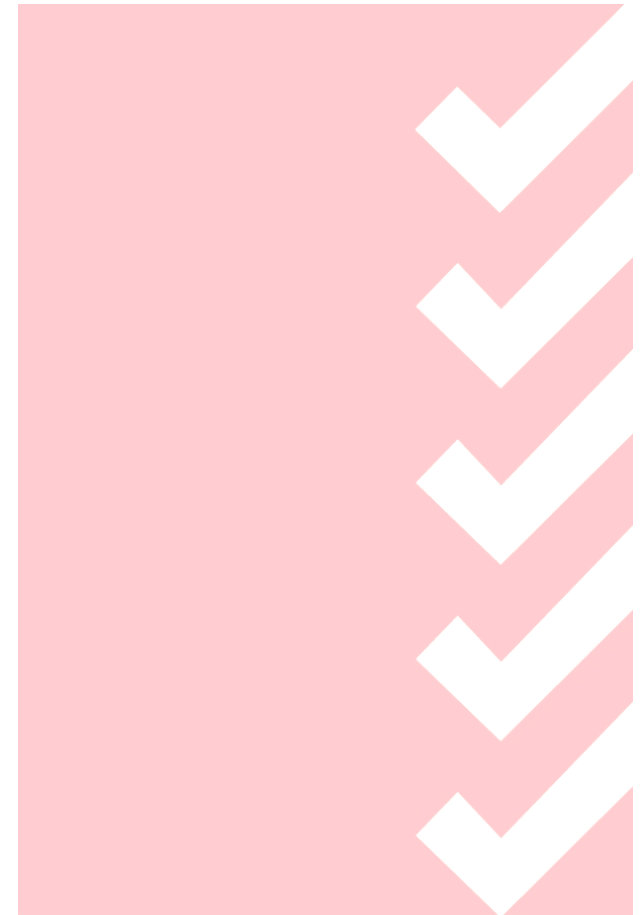


Data Analysis Tools - Agenda

Day One

8:00 AM	<p>Introductions Course Outline Basic Software Introduction Data, Information & Knowledge 3-Step Data Management Plan</p> <ul style="list-style-type: none">• 1 - Data Description<ul style="list-style-type: none">○ Measurement Indicators:<ul style="list-style-type: none">▪ Input – Process – Output <p>Workshop 1: Indicators</p> <ul style="list-style-type: none">○ Operational Definitions○ Family of Measure○ Data Type
12:00 PM	<p>Lunch</p> <p>Workshop 2: Family of Measures Workshop 3: Data Types</p> <ul style="list-style-type: none">• 2 - Data Collection & Validation<ul style="list-style-type: none">○ Data Source○ Sampling○ Stratification• 3 - Graphical Displays<ul style="list-style-type: none">○ Measures of Central Tendency○ Measures of Variability <p>Workshop 4: Check Sheets</p> <ul style="list-style-type: none">• Measurement Systems Analysis<ul style="list-style-type: none">○ Gage R&R Terminology○ Gage R&R Study○ Linearity Study <p>Workshop 5: MSA Continuous Data Workshop 6: MSA Discrete Data Homework: Data Article & MSA Article</p>
4:30 PM	<p>Adjourn for the day</p>



Data Analysis Tools - Agenda

Day Two

8:00 AM

Review and Questions
Homework Review
Control Chart Exercise
Control Charts

- Types of Control Charts
- Control Chart Use

Charts for Continuous Data

- X-Bar & R

Workshop 7: X-Bar & R

- I & mR

Workshop 8: I & mR

Charts for Discrete Data

- p & np

Workshop 9: p & np Charts

- c & u

Workshop 10: c & u Charts

12:00 PM

Lunch

Process Capability: Cp & Cpk

Workshop 11: Process Capability

Calculating Sigma

Stratification Analysis

Stratification Tools

- Pareto Analysis

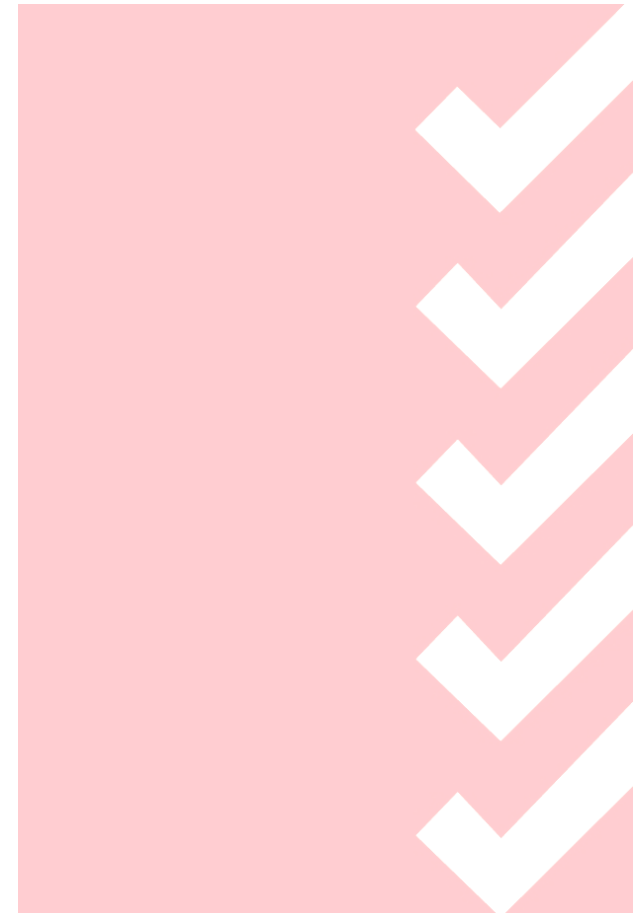
Workshop 12: Pareto Charts

- Control Charts
- Histograms
- Process Maps
- Other Stratification Methods

4:30 PM

Homework: Control Chart Article

Adjourn for the Day



Data Analysis Tools - Agenda

Day Three

8:00 AM

Review and Questions
Homework Review
Probability Distributions

- Normal

Exercise: Normal Distribution

- Binomial

Exercise: Binomial Distribution

- Poisson

Exercise: Poisson Distribution

- Hypergeometric

Exercise: Hypergeometric Distribution

- Exponential

Exercise: Exponential Distribution

- Chi-squared
- Student's t
- F Distribution

12:00 PM

Lunch
Hypothesis Testing Introduction

- Parameters vs. Statistics
- Tool Matrix
- Assumptions & Relationships
- Hypothesis Testing
- Error and Significance

Continuous – Continuous Data

- Scatter Plots & Matrix Plots

Workshop 13: Scatter Plots

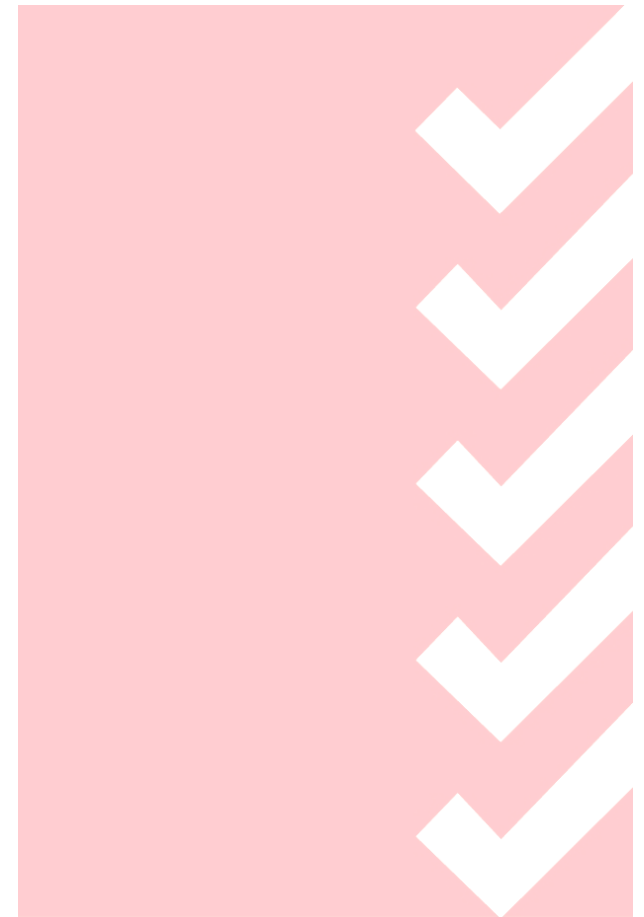
- Correlation

Workshop 14: Correlation

- Regression

Workshop 15: Regression
Homework:
Adjourn for the Day

4:30 PM



Data Analysis Tools - Agenda

Day Four

8:00 AM

Review and Questions

Hypothesis Testing (*continued*)

- Multiple Regression

Workshop 16: Multiple Regression

- Outliers
- Residuals

Workshop 17: Residuals

Continuous – Discrete Data

- F test (2 variance test)

Workshop 18: F – Test

- t – test (2 sample t)

Workshop 19: t – Test

12:00 PM

Lunch

- Analysis of Variance: ANOVA
- Test for equal variances

Workshop 20: One Way ANOVA

Discrete – Discrete Data

- Chi Square

Workshop 21: Chi Square

Non-Parametric Statistics

Workshop 22: Nonparametric Tests

Transformations

Workshop 23: Transformations

Homework: Take Home Exam

4:30 PM

Adjourn for the Day

Day Five

8:00 AM

Review and Questions

Design of Experiments (DOE) Overview

- DOE Overview to Validate Root Causes

Workshop 24: DOE – Audience Size Simulation

Test Review

11:00 AM

Wrap Up

