

## Minitab Essentials Training

### Prerequisite

None.

### Description

In this 2-day foundational course you will learn to minimize the time required for data analysis by using Minitab to import data, develop sound statistical approaches to exploring data, create and interpret compelling graphs, and export results. Analyze a variety of real world data sets to learn how to align your applications with the right statistical tool, and interpret statistical output to reveal problems with a process or evidence of an improvement. Learn the fundamentals of important statistical concepts, such as hypothesis testing and confidence intervals, and how to uncover and describe relationships between variables with statistical modeling tools. This course places a strong emphasis on making sound decisions based upon the practical application of statistical techniques commonly found in manufacturing, engineering, and research and development endeavors

### Outcome

Delegates will each receive a Minitab Essentials I and II Training Manual.

#### Topics

##### Minitab Essentials I - Contents

###### Chapter 1: Overview of Minitab

- Understanding the Minitab file structure
- Navigate the Minitab environment using the Project Manager

###### Chapter 2: Introduction to Minitab

- Import data from other software programs
- Create and run Exec files to re-create analysis steps.
- Display charts and plots to represent data
- Use Minitab tools to recode data and create new variables.
- Restructure data for analysis in Minitab.

###### Chapter 3:

- Evaluate the difference between a process(population) mean and a target value using a 1-simple t-test and confidence intervals.

- Assess the power of a hypothesis test using power analysis.
- Test for a difference between two population means using a 2-sample t-test.
- Test for a difference between paired observations using a paired t-test.

###### Chapter 4:

- Determine the appropriate sample size for a 1-proportion test.
- Determine whether a defect rate is different from the target value using the 1-proportion test.
- Determine whether defect rates are different from one another using the 2-proportion test.
- Determine whether two categorical variables are associated.

###### Chapter 5:

- Asses the power of a hypothesis test using power analysis.
- Test for a similarity between two population means using a 2-sample Equivalence test.
- Test for a similarity between paired observations using a Paired Equivalence test.

##### Minitab Essentials II – Contents

###### Chapter 1:

- Asses the power of an analysis of variance using power analysis.
- Compare group variances using a variance test.
- Compare means for samples collected at different levels using a general linear model.
- Perform ANOVA with more than one factor.
- Interpret interaction plots and multiple comparisons.

###### Chapter 2: Correlation and Simple Regression

- Measure the degree of linear association between two or more variable using correlation.
- Model the relationship between a continuous response variable and a predictor variable.

## Chapter 3:

- Measure the degree of linear association between two or more variables using correlation
- Perform regression analysis with more than one predictor.
- Understand the causes and effect of multicollinearity in multiple regression analysis
- Learn about automated procedures that can be used to help determine the final model.

## Timing

09h00	Session 1
10h30	Tea/coffee/emails/phone break
11h00	Session 2
12h30	Lunch/emails/phone break
13h15	Session 3
14h45	Tea/coffee/emails/phone break
15h00	Session 4
16h30	End