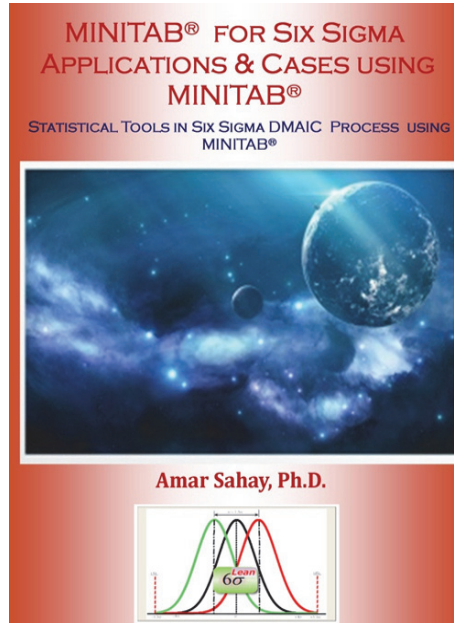


**MINITAB® for Six Sigma**  
**Learning Six Sigma Tools using MINITAB Software**  
**(Contains step-wise instructions for Six Sigma DMAIC Tools)**  
**Includes the data files for all the exercises and cases**



This objective of this book is to teach you the essentials of MINITAB® Statistical Software which contains the analysis tools for Six Sigma and related technologies. MINITAB software is widely used by companies using quality/data analysis and Six Sigma quality. This book teaches you to use MINITAB software that will enable you to use and understand Six Sigma tools and perform simple to complex data analyses, use and interpret the results. This book is also used with our other training modules including: Statistical Applications and Data Analysis for Business and Industry I and II. The book assumes a familiarity with basic statistical concepts and principles that underlie the statistical procedures.

The book is designed for those who are using data analysis/statistical techniques and want to learn and implement the techniques using standard statistical software such as, MINITAB. You will learn statistical techniques and data analysis using the computer. The book covers both simple as well as advanced topics. The techniques learned through this book will help you to apply correct statistical techniques to solve specific Six Sigma problems. The objective is to teach how to use MINITAB and be able to interpret the results. Interpreting the results correctly requires an understanding of the conceptual foundation upon which statistics and data analysis tools are based.

Upon completing the chapters, hands-on exercises, and cases using step-wise MINITAB instructions in this book, you will be able to:

- Understand the computer system, MINITAB software, data entry, editing and manipulation
- Numerical and graphical techniques using the MINITAB computer software
- Construct various charts and graphs (Graphical /visual Techniques for Six Sigma and Lean Sigma)

- Learn the visual quality tools for Six Sigma
- Learn descriptive and inferential statistics using MINITAB
- Use to generate random numbers and perform computer simulation
- Learn the concepts of probability distributions and use computer simulations to understand the concepts and workings of both continuous and discrete probability distributions
- Use computer simulation to learn the sampling and sampling distribution, central limit theorem, its applications and importance in Six Sigma and Data Analysis
- Use and learn the concepts of estimation, confidence interval, and hypothesis testing using computer
- Use MINITAB to run and interpret the regression analysis (simple, multiple, quadratic, and non-linear regression using MINITAB computer software
- Performing Analysis of Variance (ANOVA) using computer
- Learn and perform simulations that will help you understand the statistical concepts underlying Six Sigma

In addition, you will learn to perform the following analyses using MINITAB:

- Quality Tools
- Performing Sigma Level Calculations
- Measurement System Analysis (MSA) and Gage R&R Techniques using MINITAB
- Performing Process Capability Analysis using MINITAB
- Perform Regression Analysis and Modeling
- Run Multiple Regression, Non-linear Regression, Step-wise Regression and other modeling techniques using MINITAB
- Perform Analysis of Variance (ANOVA) using MINITAB
- Learn the Design of Experiment (DOE) techniques
- Learn Factorial, Fractional Factorial, and other designs and their interpretation
- Perform chi-square tests
- Perform non-parametric analysis and interpret the results
- Learn to construct various Control Charts in Six Sigma along with their application, and interpretation using MINITAB.

**The book contains examples, cases, and exercises with step-wise instructions using MINITAB. The data file for the examples, end of chapter exercises, and cases are included in the CD accompanying the book. The analysis and interpretation of exercises/cases are discussed in each chapter.**