Parkland College
Arba Minch
Short Term Trainings Programs

Statistical Data Analysis with SAS

About the Course

This course aims to provide a comprehensive introduction to the SAS analytic software for Windows. Through a mixture of lectures and in-class examples, quizzes, and take-home assignments, students will gain experience using the SAS system for data manipulation, management and analysis. You will also expect A LOT of extracurricular learning materials for self-pace learning, treat it as a BONUS! Emphasis will be placed on the skills and techniques necessary for efficient data manipulation, management and analysis. It is designed for students with little to no background with SAS, and an understanding of the basic statistical concepts. This will be an excellent choice for your first SAS introduction course for your data analysis career.

Target Participants

- Anyone from other programming fields that are interested in SAS
- Anyone with no SAS background
- Anyone who wants to understand the workflow in SAS

Course Duration

- 2 Days at 8 hours a day

Course Objectives

What you will learn

- Learn SAS and be confident on your data analysis skills
- Learn to accomplish a task with various SAS techniques, with tons of examples and quizes
- Learn step-by-step statistical analysis from descriptive statistics, hypothesis testing to linear regression
- Learn data importing with different techniques for variuos type of data
- Use many important functions to make SAS programming easy
- Advanced concepts of meta data: formats and informats, labels, lengths, etc.
- Learn the manipulation techniques to prepare the data and make the data analysis-ready
- Perform dataset manipulations: subsetting, transposition, etc.
- Be able to properly interpret the results from statistical analyses

Course Outline

1. **Understanding the workflow**
   - 1.1.Overview
   - 1.2.Ask Questions Wisely to Assist Project Planning
   - 1.3.SAS Basics
   - 1.4.Data Importing - Instream data and Proc Import
   - 1.5.Import Wizard for SAS 9.x
   - 1.6.Data Importing in SAS Studio
   - 1.7.Bring in Data from Pre-existing SAS Dataset and Create Permanent Dataset
   - 1.8.Project Part 1: Data importing - excel data (a must to the other assignments)
2. **Data Manipulation - Naming Convention and IF THEN/ELSE Statement**
   - 2.1.Overview
   - 2.2.Naming Convention and Variable Types
   - 2.3.IF THEN/ELSE Statement
   - 2.4.Keep and Drop Variables
3. **Data Manipulation - SAS Functions and DO Loop**
   - 3.1.Overview
   - 3.2.SAS Functions
   - 3.3.DO Loop
4. **Dataset Manipulation - Subset and Append**
   - 4.1.Overview
   - 4.2.Subset
   - 4.3.Use WHERE statement to subset data
   - 4.4.Concatenation (Append)
   - 4.5.Project Part 2: Concatenate 3 of the 4 datasets into one
5. **Data Manipulation - Merge and Transposition**
   - 5.1.Overview
   - 5.2.Merge
   - 5.3.Project part 3: Merge two datasets
   - 5.4.Transpose
6. **Descriptive Statistics - Frequency and Univariate Analysis**
   - 6.1.Overview
   - 6.2.Explore the Data Using PROC PRINT and CONTENTS Procedures
   - 6.3.Descriptive Statistics
   - 6.4.Calculate the mean of the sample
   - 6.5.PROC FREQ
   - 6.6.Project Part 4: perform descriptive statistical analysis
7. **One, Two Sample T-Test ANOVA**
   - 7.1.Overview
   - 7.2.One Sample T-Test
   - 7.3.Two Sample T-Test
   - 7.4.Sample ANOVA
   - 7.5.Non-parametric Analysis

8. Linear Regression - Predicting the Outcome

8.1.Overview
8.2.Linear Regression
8.3.Project Part 5: Use Linear Regression model to predict the MSRP
8.4.Dummy Variable
8.5.Project Part 6: Try to include some categorical variables into the model

Prerequisites

It is designed for students with little to no background with SAS, and an understanding of the basic statistical concepts.

Training Approach

This Statistical Data Analysis with SAS course is delivered by our seasoned trainers who have vast experience as expert professionals in data analysis with Stata. The course features plenty of practice materials, quizzes, and a final assessment to cement your newly acquired SAS skills. Training manuals and additional reference materials are provided to the participants.

Certification

Upon successful completion of this course, participants will be issued with a certificate.

Tailor-Made Course

We can also do this as a tailor-made course to meet organization-wide needs. A training needs assessment will be done on the training participants to collect data on the existing skills, knowledge gaps, training expectations, and tailor-made needs.