

## Excel Analytics: Linear Regression Analysis in MS Excel

**Duration: 8 hours**

### Course Overview:

- Identify the business problem which can be solved using linear regression technique of Machine Learning.
- Create a linear regression model in Excel and analyse its result.
- Confidently practice, discuss and understand Machine Learning concepts

### Target Audience:

- Working Professionals beginning their Data journey
- Anyone curious to master Linear Regression in short span of time

### Module 1: Introduction

- Introduction

### Module 2: Getting data ready for Regression model

- Gathering business knowledge
- Data Exploration
- Course Resources
- This is a milestone!
- The Data and the Data Dictionary
- Univariate analysis and EDD
- Discriptive Data Analytics in Excel
- Outlier Treatment
- Identifying and Treating Outliers in Excel
- Missing Value Imputation
- Identifying and Treating missing values in Excel
- Variable Transformation in Excel
- Dummy variable creation: Handling qualitative data
- Dummy Variable Creation in Excel
- Correlation Analysis
- Creating Correlation Matrix in Excel
- Quiz

### Module 3: Creating Regression Model

- The Problem Statement
- Basic Equations and Ordinary Least Squares (OLS) method
- Assessing accuracy of predicted coefficients
- Assessing Model Accuracy: RSE and R squared
- Creating Simple Linear Regression model
- Multiple Linear Regression

- **The F - statistic**
- **Interpreting results of Categorical variables**
- **Creating Multiple Linear Regression model**
- **Quiz**
- **Excel: Running Linear Regression using Solver**
- **Quiz**

#### **Module 4: Optimizing Business Models - Case Studies**

- **Introduction**
- **Goal-seek and Scenario Manager in Excel**
- **Solver in Excel**
- **Different Solving methods of Excel Solver**
- **Solving a Transportation problem**
- **Price Skimming**
- **Excel - Price Skimming model**
- **Concept of Customer lifetime Value**
- **Excel - Calculating customer lifetime value**

#### **Module 5: Bonus Section**

- **Popular Excel charts**
- **The final milestone!**
- **Bonus Lecture**