

# R

## For Finance Professionals

### Summary

Leveraging the powerful research-oriented functions in R, this course is designed to provide practice with common econometric tools used in Finance.

Participants will be introduced to best practices programming in R to clean, analyze and visualize financial data.



#### Prerequisites

Participants do not require prior programming knowledge but a general understanding of programming principals is recommended. Participants are expected to download and install RStudio before the course.



#### Timing

This course requires 8 - 16 hours, depending on the amount of material to be covered.

### Learning Topics

#### 1. Using R in RStudio

- ✓ Developing familiarity with RStudio
- ✓ Introduction to Markdown
- ✓ Learn how to write programs in R and developing an understanding for functions, loops, logical operations and other programming best practices

#### 2. Data Collection, Cleaning, Manipulation and Visualization

- ✓ Import data into data frames
- ✓ Develop the necessary skills to clean raw financial data, and gain familiarity in overcoming common issues with numerical data
- ✓ Learn how to merge data from various sources and leverage built-in functionality to gain efficiency
- ✓ Build programs to perform exploratory data analysis using basic statistical functions
- ✓ Develop the ability to create powerful visualizations using the ggplot package

#### 3. Data Analysis and Modeling

- ✓ Gain practical experience in selected quantitative methods including linear regression, time series analysis, hypothesis testing and correcting for common statistical inference issues encountered with financial data
- ✓ Build and test financial market analyses to explore common tasks such as capital asset pricing, times series forecasting and multi-factor models