**Introduction to R for Finance**

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**Aims of the Module**

This module will introduce students to R, a free and widely used software. The module will introduce students to a variety of functions in R. Students will be able to use the knowledge gained from this module to undertake basic exploratory data analysis and regression analysis. The module will use a variety of examples from the theory and practice of finance.

**Textbooks**

Students do not need to purchase any textbook for this module. Details notes and R code will be provided. Interested students will, however, may consider consulting a variety of sources available to learn advanced financial theory and R programming. Some useful texts are as follows.

Jean-Pierre Danthine and John B Donaldson. Intermediate financial theory. academic press, 2014.

Gareth James, Daniela Witten, Trevor Hastie, and Robert Tibshirani. An introduction to statistical learning, Springer, 2013. (Available at: <http://faculty.marshall.usc.edu/gareth-james/ISL/>)

Larry Wasserman. All of statistics: a concise course in statistical inference. Springer Science & Business Media, 2013.

Hadley Wickham and Garrett Grolemund. R for data science: import, tidy, transform, visualize, and model data. O’Reilly Media, Inc., 2016. (Available at: <https://r4ds.had.co.nz>)

**Module Outline**

Session 1: Introduction to the Theory and Practice of Finance

Session 2: Starting with R

Session 3: Handling Data with R

Session 4: Exploratory Data Analysis

Session 5: Introduction to Probability and Statistics with R

Session 6: Linear Regression with an Example of an Event Study

Session 7: Classification with an Example of Bankruptcy Prediction