STAT GR5261/GU4261 STATISTICAL METHODS For FINANCE

Fall 2018

F 10:10am–12:40pm, 428 Pupin Laboratories

Instructor: Hammou Elbarmi

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Office hours: Friday 1-2pm

Teaching Assistant: Hok Kan Ling (Brian)

Office hours: Tuesday 16:00-18:00 and Thursday 12:30:14:30

Prerequisites: Familiarity with probability theory and statistical inference and linear regression, some knowledge of multivariate analysis and some matrix algebra.

Grading: Your final grade will be based on one in class exam, take home assignments (HWs) and a project. Homework will be assigned approximately every week and collected a week later. Late assignments will not be accepted and they will result automatically in a zero. HWs submitted by email will NOT be graded and the lowest score on the homework assignments will be dropped. The exam will count for 40% of your final score and the HW will count for 30%. The project will count for the remaining 30%.

Textbook (required):
Statistics and Data Analysis for Financial Engineering with R examples by Ruppert, David, Matteson. New York: Springer.

Reference books (optional):
Statistical Models and Methods for Financial Markets by T.L. Lai and H. Xing, New York: Springer.
Statistics and Finance: An Introduction by David Ruppert, New York, Springer

Outline of the course (the material will not be covered in this order)

1. Chapter 1: Introduction
2. Chapter 2: Returns
3. Chapter 3: Fixed Income
4. Chapter 6: Modeling Univariate Distributions
5. Chapter 7: Resampling
6. Chapter 8: Multivariate Statistical Models
7. Chapter 8: Copulas
8. Chapter:11: Portfolio Theory
9. Chapter 16: The Capital Asset Pricing Model
10. Chapter 17: Factor Model and Principal Component Analysis
11. Chapter 19: Risk Management

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