FINC-780: Financial Analytics
Course Syllabus

NOTE: The information presented in this syllabus is subject to expansion, change, or modification during the semester.

Course Description

Finance is increasing a data-driven and computationally-intensive field. This course introduces data-driven applications such as portfolio analysis, technical analysis, trading algorithms, security pricing, and information disclosure analysis. Although not a programming course per-se, students will learn how to write functions and code using the R language with some work also using a second language (Python). R is increasingly the tool of choice for finance and students will learn not only "base R" (the core capabilities of the language) but also key packages written specifically for finance. Students will also be exposed to the world of financial information – specifically, they will use data extractions from sources such as Bloomberg, Yahoo Finance, and the SEC website. There are no pre-requisites for the course, but instructor permission is required for students not belonging to the MS-Computational Finance or other quantitative programs such as the MS- Business Analytics, which have program-level pre-requisites in the areas of calculus, linear algebra, and programming.

Course Learning Outcomes

After completing this course, you will be able to:

- program using R (and/or Python)
- use data management techniques, especially for financial data
- apply statistical analyses such as OLS and logistical regression using financial data
- computationally solve financial problems in areas such as valuations, trading, portfolio optimization, and risk management

Materials & Programs

1. Manuals / Entry level books for R. A reasonable starter book for R is: R for Everyone, Jared Lander, Addison-Wesley. A slightly more detailed (and more useful) book for R is: The Art of R Programming, Norman Matloff, no starch press. Either book can be purchased from Amazon for a modest price.
2. A computer that can handle the various programs for the course.

3. A graduate level investments book such as Bodie, Kane, Marcus, Investments (any edition because core finance theories have not changed much in years, so get one you can afford).

Expectations

This is a 3-credit semester course. You should plan to spend 8 to 12 hours on course activities each week.

It is the responsibility of each student to understand fully the expectations for participation for every course in which the student is enrolled. Students are responsible for noting deadlines and policies for submissions.

Important RIT Deadlines: For term dates, including add/drop and withdrawal deadlines refer to the RIT Calendar.