

Time and Place: XXX

Instructor: Xiaoming Huo, Room 335, ISyE Groseclose Building, 765 Ferst Dr.
(404) 385-0354, xiaoming@isye.gatech.edu (Email preferred in communication)

Office hours: Immediately after class, or by appointments.

Prerequisite: MATH 3215 (or the equivalent), some knowledge of programming, and MS QCF standing or some previous exposure to the topics of stocks, bonds and options.

Topics:

0. Basics
1. Linear regression
2. Multivariate analysis & maximum likelihood
3. Applications in portfolio theory and investment models
4. Parameter estimation & statistical approaches
5. Financial time series models, GARCH
6. Dynamic models of asset returns and their volatilities
7. Nonparametric regression & option pricing theory
8. Advanced multivariate and time series methods in financial econometrics
9. Interest rate markets
10. Statistical trading strategies
11. Statistical methods in risk management

Text:

- Ruppert “Statistics and finance: an Introduction” and
- Lai & Xing “Statistical models and methods for financial markets.” Both by Springer.

Class Mailing List: we use the mailing list in the [T-square](#).

Class notes: will be posted at Tsquare.gatech.edu.

Grading Policy:

- There are roughly biweekly *homework* assignments. Late Homework will not be accepted. You are allowed (and encouraged) to work together with other students on homework, as long as you **write up** and turn in your own solutions. You are also allowed (and encouraged) to ask me questions, although you should try to think about the problems before asking. I strongly encourage you to work on extra problems from the book on your own.
- *Exams* include two midterms. They are close book. For the midterms I and II, students are allowed to bring four and eight pages (two-sided, or equivalently 8 and 16 one-sided pages) notes, respectively. On the notes, you can write down anything you like. But they have to be **self-made**. Do not copy from others.
- A *make-up exam* requires a written documentation with proper excuse. Please keep in mind that it does take time to prepare a make-up exam. In general, I will not allow makeup exam unless the excuse is extremely compelling.
- There is no final exam. You are required to work on a final project, and give an eight minute presentation on your project in the last two weeks of the semester.
- Distribution of points:

- Class Attendance 2 %
- Homework & Projects 25 %
- Midterm 23 % + 25 %
- Final project, written and oral presentation 25 %

Honor Codes: It is your responsibility to get familiar with the Georgia Tech Honor Code. Use of any previous semester course materials is allowed for this course; however, I remind you that while they may serve as examples for you, they are not guidelines for any tests, quizzes, homework, projects, or any other coursework that may be assigned during the semester. For any questions involving these or any other Academic Honor Code issues, please consult me, or visit www.honor.gatech.edu.

Zero-tolerance policy: any violation of honor codes (e.g., cheating in hws, tests, etc) will result in an automatic F in this class.