

OR&IE 473 — Course Information Spring 2006, Prof. D. Ruppert

Home page

Course materials including this information, lecture notes, reading assignments, homework assignments, data sets, SAS programs, MATLAB programs, and handouts can be found at:

<http://www.orie.cornell.edu/~davidr/or473/>

The course is also at the Blackboard site:
(coming soon)

Be sure to enroll in the course at the Blackboard site so that you receive email messages about the course.

Class Times

- Lectures: MWF 11:15–12:05 in Hollister B14

Course objectives

- This course is an introduction to empirical research methods in financial economics. We will focus on the statistical techniques used most often in the analysis of financial markets and how they are applied to actual market data.
- My aim is to make this a “capstone” course where students integrate what they have learned in previous courses in statistics and probability by seeing this material applied in finance.
- Probabilistic and statistical tools such as Brownian motion, geometric Brownian motion, time series analysis, ARIMA models, GARCH models, regression, maximum likelihood estimation, and likelihood ratio hypothesis testing will be covered.
- The students will be introduced to financial concepts and models such as returns, the random walk hypothesis, efficient portfolio selection, the capital asset pricing model (CAPM), the Black-Scholes options pricing formula, and the term structure of interest rates.

Prerequisites

- Math 293 and 294; ORIE 270, and 360.
- **No prior knowledge of finance is assumed.**

Textbooks

- Ruppert, D. (2004). *Statistics and Finance: An Introduction*, Springer.
- Pratap, R. (2006). *Getting Started with MATLAB 7*, Oxford.

Instructor

Professor David Ruppert. 225 Rhodes Hall.
Phone: 255-9136. Email: davidr@orie.cornell.edu Web:
<http://www.orie.cornell.edu/~davidr> (see web page for office hours)

Homework

Homework assignments will be given regularly, approximately every week. Homework is due by 3pm on the due date, which will be a Friday. It can be turned in during class on the due date or to the drop box at the 2nd floor of Rhodes, near the entrance to Upson. You are allowed one “free” late homework that all receive full credit. After that, late homework receives half credit. However, homework due on a Friday must be turned in by 9am on Monday to receive any credit.

In the case of illness or other emergencies, contact me for an extension. If I give you an extension, it doesn’t count as late.

Project

In the project, the techniques taught in the course are used to analyze financial markets data. Students will work in teams of two or three students. Each team must write a project proposal (due March 22 2004), find the necessary data, carry out the project, and write a project report. Detailed requirements of the project are available on the course web site.

Exams (Prelims and final)

The exams will be closed book but you are allowed to bring three sheets (six pages) of notes to the prelims and five sheets to the final.

The prelims will be during class on Feb 27 and April 3. Make-up prelims will be allowed only for illness, death in the family, or other emergencies. Travelling for a job interview is **not** a valid excuse — schedule interview trips for other days. There will be no early makeup exams for students who want to leave Ithaca early — please don’t even ask.

The final will be Tuesday, May 16, 9–11:30am. *University Policy on Make-up Final Examinations*: Students requiring a make-up exam must speak to the instructor by 1/27/2006. Make-up final examinations may be scheduled during any of the exam days and times listed above.

Grading

Grades will be based on course work as follows:

Homework	15%
Project	15%
Two Prelims	each 20%
Final	30%