Instructor: Ji Hyung Lee, Savery 336, 206-543-4592, email: jihyung2 at uw.edu.

Time and Location: MW 11:30 - 1:20, Savery 132.

Office Hours: MW 1:30 - 2:30 (after class) or by appointment.

Textbooks

- *An Introduction to Computational Finance and Financial Econometrics* by Eric Zivot, manuscript in preparation. Pdf files will be provided through canvas.

- *Statistics and Data Analysis for Financial Engineering* by David Ruppert, Springer-Verlag. The UW library has access to the UseR series of books from Springer-Verlag. If you have a UW net ID then you can get access to these ebooks through the UW library page. Pdf files will be also provided through canvas.

Exams: The midterm exam is on Monday, November 4 from 11:30 - 1:20 p.m (in class). The final exam is on Wednesday, Dec 11 from 2:30 to 4:20 p.m.

Grading: There will be weekly assignments, a midterm exam and a final. They will count toward the grade as follows.

- Assignments 20%
- Midterm 40%
- Final 40%

Norms

Problem sets will be assigned on Mondays (after class), and will be due by next Monday 11:30 am (before class). You may submit either through canvas or to me before class. Please use our canvas discussion page for your questions. In this way we can openly discuss what are difficult and how to overcome. You can discuss problem sets with classmates, but have to submit your own answers. Problems sets are mainly to encourage you to "practice", and doing them by yourself will be the most important task in this class.

Please read "Department Policy on Academic Conduct" from canvas webpage.

*Academic integrity is the cornerstone of the Department’s rules for student conduct and evaluation of student learning. Students accused of academic misconduct will be referred directly to the Office of Community Standards and Student Conduct for disciplinary action.*
pursuant to the Student Conduct Code and, if found guilty, will be subject to sanctions. Sanctions range from a disciplinary warning, to academic probation, to immediate dismissal for the Department and the University, depending on the seriousness of the misconduct. Dismissal can be, and has been, applied even for first offenses. Moreover, a grade of zero can be assigned by the instructor for the course.

**Description of the Course**

This course is an introduction to econometric modelling in empirical/computational finance. The course seeks to understand empirical properties of financial data. We also study statistical/probabilistic models behind these stylized facts. First, we review probability/statistics and time series concepts that will be useful to understand financial market dynamics. Then some popular econometric models and estimation methods will be investigated. Both analytical problem sets and data exercises will be assigned as homework, in order to enhance our theoretical and practical skills. We will closely follow the earlier courses taught by Prof. Eric Zivot, so his course webpage

$$http://faculty.washington.edu/ezivot/econ424/econ424.htm$$

will be a useful resource.

**Tentative Schedule**

- Week 1 (Sep 25 & 30): course introduction, understanding financial returns and some review.
- Week 2 & 3 (Oct 2,7,9 & 14): review on probability and statistics, some time series concepts.
- Week 6: review session (Oct 30 ) and midterm in class (Nov 4).
- Week 7 & 8 (Nov 6, 13, 18 & 20): portfolio theory, optimization and Markowitz algorithm.
- Week 9 & 10 (Nov 25, 27, Dec 2): single index model and CAPM.
- Last Week: review session (Dec 4) and final exam (Dec 11).