Introduction to Financial Data Analysis

Week 1: Course Instructions

- Instructor: Prof. Si Chen
- Email: sichen@cuhk.edu.cn
- Office hour: Room 302, Zhiren Building,
- Tuesday Afternoon 4:00-5:00 by appointment
- TAs: Miss Dong Liyuan, Mr. Zhai Daojing
- Email: dongliyuan@cuhk.edu.cn; daojingzhai@cuhk.edu.cn
- TA Office Hour: Wednesday afternoon
- Room 322, Zhiren Building (Dong) ,
- Room A302 (Zhai)
- 20 students for tutorials (x2)
- Course target students: Year 2 and year 3 students in finance major

Course Syllabus

Week	Content
1	Introduction to Finance Data and R Programming
2	Prices, returns and portfolio returns
3	VaR and ES, OLS Regression
4	Factor Models and Risk-adjusted Performance Measures
5	Markowitz Mean-Variance Efficient Portfolio
6	Classic Properties of Financial Time Series 1
7	Classic Properties of Financial Time Series 2
8	Mid-term Exam
9	Classic Properties of Financial Time Series 3
10	Case Studies of Linear Time Series
11	High Frequency Financial Data 1
12	High Frequency Financial Data 2
13	Fama-French Model and a Case Study 1
14	Fama-French Model and a Case Study 2

Textbook and Recommended Readings

Required

- 1. Tsay, R.S., 2014. An introduction to analysis of financial data with R. John Wiley & Sons. Chapter 1-3, 6
- 2. Ang, C.S., 2015. Analyzing financial data and implementing financial models using R. Springer. Chapter 1-7
- 3. S. Perlin, Marcelo, 2017, Processing and Analyzing Financial Data with R

Recommended

- 1. Wooldridge, J.M., 2015. Introductory econometrics: A modern approach. Nelson Education.
- 2. Florian Heiss., Using R for Introductory Econometrics. http://www.urfie.net/index.html
- 3. Cochrane, J.H., 2009. Asset pricing: Revised edition. Princeton university press. Chapter 5, 9
- 4. Tsay, R.S., 2005. Analysis of financial time series (Vol. 543). John wiley & sons. Chapter 1, 2, 5

Course Evaluation

Component/ method	% weight
Quiz (In class coding task)	10%
Take home coding assignments	20%
Mid-Term Exam	30%
Final Exam	40%

Course Evaluation

- 1. Quiz (10%): Random coding quizzes are given at the beginning of classes for around 5-10 mins.
- Quiz are based on last 2 weeks materials. You could refer to your notes/textbook/website during the quiz. However, you are not allowed to copy code from your classmates.
- Students who missed 1 or less than 1 quiz of the all quizzes will get full score of 10. Students who missed more than 1 quiz will get 0 in this part.
- If you have medical conditions or internship or exams so that you won’ t be able to attend class, you need to send an email to request for a leave from TA ahead of the class.

Course Evaluation

- 2. Take Home Coding Assignments (20%):
- You will be given take home coding and written homework every one/two weeks. Homework are due by 8:00AM Monday. Home work are posted online after class. All home work (written/coding) must be handed in digital format to RA.
- Late hand in of homework will results 0 in that homework.
- You may use your own laptop for coding assignments. However, results will be checked using school lab computer. Therefore, you must make sure your code works on school lab computer.

Course Evalutation

3. Mid-term Exam(30%): Mid-term exam is in-class exam at week 8.

- The date of midterm exam is either **Oct 21,2019 or Oct 23,2019** depending on the progress of class.
- Mid-term exam include both coding and written questions covering all materials before mid-term.
- Mid-term exam is closed book exam. You could bring a half A4 size hand-written singled sided cheat sheet with you. Data will be provided to you ahead of the exam unless specially requested.
- Mid-term exam is 90 mins.

Course Evaluation

4. Final-Exam （40%): Final exam is at week 15.

- The date of final exam is **Dec. 11th, 2019.**
- Final-Exam exam include both coding and written questions covering all materials in this course.
- Final exam is closed book exam. You could bring a half A4 size hand-written singled sided cheat sheet with you. Data will be provided to you ahead of class unless specially requested.
- Final exam is 90 minutes.

Course Policy

1. The course will be taught from a series of lecture notes. These notes will be posted to Blackboard in advance of class. Please print the lecture notes out and bring them to class so that you can follow along.

2. Except in the event of serious medical illness (evidenced by your doctor's note), no make-up exam will be given. Missed exam and quiz without a legitimate reason will result in a zero for the exam.

3. I expect professional classroom behaviour. This includes the silencing of cell phones, no extracurricular reading or do homework or online surfing during class. Any activities which disturb the learning experience of the other students will not be tolerated.

4. You could use your own laptop for practicing coding at home, but all students must use lab computer for programming in class and homework. Programming are taught based on windows system only. Each student will be allocated to a computer at the beginning of each term and you must use this computer for entire term except for the mid-term exam and final exam in which you’ ll be allocated a seat randomly.

Course Policy

5. Attention is drawn to university policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations.

6. Office hour: My office hour is Tuesday afternoon 4:00pm - 5:00pm. Please email me ahead of time to make appointment.