Faculty Liberal Arts and Professional Studies
Department of Economics

AP/ECON 4140 3.0 N – Financial Econometrics
Winter 2023

Course Outline

Course Instructor

Name: Professor Ji Qi

Email: jiqi@yorku.ca, **please quote "ECON4140N, name, student #" on the subject line**

Office hours: **Virtual** Monday and Friday 9:00 am-10:00 am Toronto time (Zoom meeting ID is 395 906 4067)

Course Webpage: https://eclass.yorku.ca/ (previous Moodle). After class starts, **please check our course page on a regular basis.**

Prerequisite / Co-requisite:

Prerequisite: AP/ECON 3210 3.00 or AP/ECON 3500 3.00, or equivalent.

Class Time and Location

Wednesday 7 pm – 10 pm, ACW204

I will use eClass to post announcements, lecture slides, practice, group projects, and data and codes. Students are invited to consult eClass regularly.

Students do not have permission to duplicate, copy, and distribute the course slides and practice outside of the class (these acts can violate copyright laws and FIPPA)

Technical requirements for taking the course

Please review the technology requirements and FAQs for Moodle at: http://www.yorku.ca/moodle/students/faq/index.html.

If students have technical difficulties, students can call York University's number 416-736-5800 (or e-mail esohelp@yorku.ca).

Here are some useful links for student computing information, resources, and help:

Student Guide to eClass

Computing for Students Website

Emails and Communications

Please quote "ECON4140N, name, student #" on the email subject line. Since we have Zoom virtual office hours every week to answer your questions, and sometimes it's challenging to reply to math-related questions in emails, please take opportunities to ask math questions during virtual office hours.

To hide your email address for privacy reasons in eClass: Step1: Click your name on the top-right of the eClass website, then click "Profile" on the drop-down menu; Step 2: Under "User details," click "Edit profile"; Step 3: From the "Email display" drop-down menu choose "Hide my email address from non-privileged users"; Step 4: Scroll to the bottom of the page and click on the "Update profile" button.

Course Description

This course is an introduction to financial econometrics. The objective of the course is to explain the use of selected statistical methods and econometric models in finance. The content of the course includes simple static and dynamic econometric models of financial returns, elements of portfolio theory, the capital asset pricing model (CAPM), elements of option pricing, the value-at-risk (VaR), and the autoregressive conditional heteroskedasticity (ARCH) model. The theoretical concepts will be illustrated in class by empirical examples.

The sessions are in the form of a lecture by the professor. Students will find the slides related to the covered topics on the course webpage before each class. The instructor provides more details and explanations on the topics during the lectures. As nothing beats practice, students need to practice by solving many financial econometric problems as a learning tool. The practice works include exercises involving statistical software. Students may also use their favourite software (e.g., SAS, R or MATLAB).

At the end of this course, students will be able to know and understand the essential concepts in financial econometrics, analyze financial data using econometric models, understand the properties of financial data, estimate basic dynamic models for finance, interpret a computer output of model estimation, and develop basic programming skills.

Course Text / Readings

The course readings are primarily based on provided course slides on eClass. Additional readings may be assigned or recommended during the course. To prepare for exams and be familiar with the materials discussed in the class, I strongly encourage students to try their best to practice questions and problems assigned in class.

The following textbooks can be taken as reference: Statistics and Finance, by David Ruppert, Springer 2004. ISBN: 978-0-387202-70-9.

Organization of the Course (Topics)

1. Review of Statistics
2. Linear Regression
3. Transformation on Regression
4. Returns
5. Time Series Models
6. The Capital Asset Pricing Model
7. Option Pricing

Note: This lecture schedule is a guide. Dates and coverage may vary given time constraints.

Evaluation

Group Assignment 1(10% of final grade): due Jan 18th
Group Assignment 2(10% of final grade): due Feb 1st
Midterm Exam (20% of final grade): at Feb 15th, Class Time
Group Assignment 3(10% of final grade): due Mar 8th
Group Assignment 4(10% of final grade): due Mar 22nd
Final Exam (40% of final grade): set by the Registrar's office

- Assignments received later than the due date will not be accepted.
- The midterm exam will cover material presented up to and including the class before the exam, while the final exam will cover material from the entire course.
- Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

Grading, Assignment Submission, Lateness Penalties, and Missed Tests

Assignment Submission: Proper academic performance depends on students doing their work not only well but on time. Accordingly, assignments for this course must be received on the due date specified for the assignments.

Lateness Penalty: Assignments received later than the due date will not be accepted and will be given a grade of zero. Exceptions to the lateness penalty for valid reasons such as illness, compassionate grounds, etc., may be entertained by the Course Instructor but will require supporting documentation (e.g., a doctor's letter). If a student misses the assignments and has a documented excuse, the final exam will carry the extra weight.

Grading: For a complete description of the York grading system, see the York University Undergraduate Calendar - http://calendars.registrar.yorku.ca/2010-2011/academic/index.htm

Reappraisals: For reappraisal procedures and information, please visit the Office of the Registrar site at: http://www.registrar.yorku.ca/grades/reappraisal/

Missed Exams:

If a student misses the midterm and has a documented excuse, the final exam will also carry the extra weight. There will be no make-ups for the midterm exam.

A deferral for the final exam will be granted only with a documented reason, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., a doctor's letter). These students must fill out the Deferred Standing Agreement form and submit it with all original supporting documentation to the Department of Economics within ten business days of the original exam date. See https://econ.laps.yorku.ca/students/academic-policies-procedure/deferred-standing/ for details.

Accommodations: The students who have the letter of Academic Accommodations from Student Accessibility Services should directly concoct the Alternative Exam Centre for the test arrangement.

Academic honesty and integrity: In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's Academic Integrity module at the beginning of the course https://spark.library.yorku.ca/understanding-the-assignment-assignment-requirements/. Breaches of academic integrity range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.). According to the Senate Policy on Academic Honesty, all instances of academic dishonesty in this course will be reported to the appropriate university authorities and can be punishable.

Policy and Guidelines on Withdrawn from Course: http://secretariat-policies.info.yorku.ca/policies/withdrawn-from-course-w-policy-and-guidelines/

OTHER IMPORTANT COURSE INFORMATION FOR STUDENTS

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage; http://www.yorku.ca/secretariat/policies.

- Senate Policy on Academic Honesty and the Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning, and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

Course ADD/Drop Deadlines

EVENT	WINTER (TERM W)
Classes start	Jan. 9
Last date to announce components of final grades	Jan. 23
Winter Reading Week[1]	Feb. 18-24
Last date to submit Winter term work	April 8
Winter classes end[4]	April 10
Winter Study Days[2]	April 11
Winter examinations[5]	April 12-27