

Faculty of Liberal Arts & Professional Studies
Financial Econometrics
Econ4140B
Fall/2020

Course instructor:

Joann Jasiak: <http://www.jjstats.com>

TA: TBA

Technical requirements for taking the course:

Several platforms will be used in this course (e.g., Moodle, Zoom, etc.) through which students will interact with the course materials, the course director/TA, as well as with one another. Please review this syllabus to determine how the class meets (in whole or in part), and how office hours and presentations will be conducted.

Students shall note the following:

- Zoom is hosted on servers in the U.S. This includes recordings done through Zoom.
- If you have privacy concerns about your data, provide only your first name or a nickname when you join a session.
- The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.

Please review the [technology requirements and FAQs for Moodle](#).

In order to fully participate in your course, students are expected to participate in Zoom meetings and download course materials from Moodle available at <https://eclass.yorku.ca/eclass/course/view.php?id=1105>

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

[Student Guide to Moodle](#)

[Zoom@YorkU Best Practices](#)

[Zoom@YorkU User Reference Guide](#)

[Computing for Students Website](#)

[Student Guide to eLearning at York University](#)

To determine Internet connection and speed, there are online tests, such as [Speedtest](#), that can be run.

Times and locations: Mon and Wed 4:00

Please note that this is a course that depends on remote teaching and learning. There will be no in-person interactions or activities on campus.

Organization of the course

The course will meet on Zoom at 4 on Mondays and Wednesdays to introduce the content of each topic of the course on Moodle and to answer students questions about the course material. The Zoom session will resemble office hours. The duration of the meetings on Zoom will vary depending on students' participation and topic. After the Zoom session students can use chat to communicate individually with the teacher.

The entire course, including the submission of assignments, participation/discussion and test-taking, will take place on the course's Moodle. Although we are scheduled to meet at particular times and days of the week, this course has no live virtual meetings outside of those hours. Like an online course, you can learn the course material at your own pace.

You need however to hand in assignments and submit quizzes by their due dates.

Course webpage: <https://eclass.yorku.ca/eclass/course/view.php?id=1105>

Virtual office hours: Mondays, Wednesdays 4:00

Expanded course description:

This course is an introduction to financial econometrics for students who have taken Econ 3210 or Econ 3500. Background knowledge of finance is not required.

Course Content

1. Returns; Random Walk Model and Efficient Market Hypothesis : (chap. 3)
2. Introduction to Time Series Models: AR(1) Autoregressive Process (chap 4.1-4.4)
3. Portfolio Theory: Efficient Portfolio, Frontier, Sharpe Ratio; (chap 5.1-5.4)
4. Capital Asset Pricing Model (CAPM); Betas, Security Market Line ; (chap. 7.1-7.4)
5. Autoregressive Conditional Heteroskedastic (ARCH) model: (chap. 12.1-12.5)
6. Option Pricing and No-Arbitrage Condition ; (chap. 8.1-8.5)
7. Value-at-Risk; (chap. 11.1-11.2.2)

All theoretical concepts introduced in this course will be illustrated by empirical examples. Additional examples will be provided in homework assignments. Students are encouraged to work and submit their assignments in teams of no more than 3 participants. The assignments will require only basic programming skills. In the course, students can learn SAS, and use the SAS codes available on the course website. Otherwise, any other software can be used to complete the assignment. Each assignment handed in has to include the code and computer output for full grade.

Course objectives and learning outcomes:

The objective of the course is to explain, in simple terms, the use of selected statistical methods and econometric models in finance

The outcomes of this course are: 1. know and understand the essential concepts in Financial Econometrics 2. understand the properties of financial data on stock (market

index) prices, returns and portfolio strategies. 3. learn how estimate basic dynamic models for Finance 4. interpret a computer output of model estimation 5. develop basic programing skills

Course readings

Required:

D. Ruppert, Statistics and Finance, Springer 2004.

Suggested for complementary readings:

1. Lecture notes at <https://moodle.yorku.ca>.
2. C. Brooks, Introductory Econometrics for Finance, 2nd ed., 2008, Cambridge University Press

Evaluation

The assignments need to be handed in on-line prior to the due date. Quizzes will be posted one week before the due date and have to be submitted prior to the due date.

Assessment	Due date	Value (% of final grade)
Assignment 1	By October 9	20%
Assignment 2	By November 6	20%
Assignment 3	By December 4	20%
Quiz 1	By October 23	20%
Quiz 2	By December 9	20%

Course policies

Assignments need to be handed in on Moodle. The computer output is an essential component of the assignment, which has to be provided along with the typed or hand-written answers to questions.

Assignments received later than the due date will be penalized by one half-letter grade (1 grade point) per day that assignment is late. Exceptions to the lateness penalty for valid reasons such as illness, compassionate grounds, etc, will require supporting documentation (e.g., a doctor's note).

Students with a documented reason for missing a due date of quiz, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., doctor's note) will be allowed to write a make-up quiz on a date determined

by the Course Instructor. A deferred or deferred quiz will not be offered. The weight of quiz 1 will not be transferred to quiz 2. Further extensions or accommodation will require students to submit a formal petition to the Faculty.

In case audio-visual recordings of the live sessions on Moodle are made, note that 1) the recordings should be used for educational purposes only and as a means for enhancing accessibility; 2) students do not have permission to duplicate, copy and/or distribute the recordings outside of the class (these acts can violate not only copyright laws but also [FIPPA](#)); and 3) all recordings will be destroyed after the end of classes.

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. 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.). All instances of academic dishonesty in this course will be reported to the appropriate university authorities, and can be punishable according to the [Senate Policy on Academic Honesty](#).

Course information

For policies related to intellectual property, accessibility, student conduct, Zoom meetings and academic integrity, see information provided under the Course Information section, including on [Student Rights & Responsibilities](#), and [Academic Accommodation for Students with Disabilities](#).