

FINANCIAL ECONOMICS ECONOMICS EC3332B-001

Department of Economics
Western University

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Office Hours: Tuesday, 10-11:30am

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Registration

You are responsible for ensuring you are registered in the correct courses. If you are not registered in a course, the Department will not release any of your marks until your registration is corrected. You may check your timetable by using the Login on the Student Services website at <https://studentservices.uwo.ca/secure/index.cfm>. If you notice a problem, please contact your Faculty Academic Counsellor immediately.

Prerequisite Note

The prerequisite(s) for this course is (are) **Economics 2221A/B** and **Economics 2261A/B**.

You are responsible for ensuring that you have successfully completed all course prerequisites, and that you have not taken an anti-requisite course. Lack of pre-requisites may not be used as a basis for appeal. If you are found to be ineligible for a course, you may be removed from it at any time and you will receive no adjustment to your fees. This decision cannot be appealed.

If you find that you do not have the course prerequisites, it is in your best interest to drop the course well before the end of the add/drop period. Your prompt attention to this matter will not only help protect your academic record, but will ensure that spaces become available for students who require the course in question for graduation.

Recommended (optional) prerequisite: Economics 2122A/B. To understand financial models you absolutely *must* understand statistics. It is not enough to know the formulas. As an example, you should be able to, *in simple English*, give definitions of variance and covariance and explain what the R-squared of a linear regression means. Taking this course without this knowledge is like taking Spanish Literature without ever having spoken or read Spanish before.

Learning Outcomes:

During this course, students will learn to...

- i) ...evaluate the risk inherent in financial asset prices and describe the tradeoffs between risk and reward (expected return) over time and in a cross-section of assets using the CAPM and APT.

- ii) ...design mean-variance optimal portfolios, construct these portfolios using computer software and real asset return data they obtain online, and evaluate the performance of these portfolios over time with quantitative metrics used by modern fund managers.
- iii) ...estimate the parameters of asset pricing models using current econometric techniques and test whether (and how well) these models are able to explain patterns of risk and return we see in real-world financial markets.
- iv) ...price fixed-income and equity assets using present value or “discounted cash flow” models and use these models to construct arbitrage trading strategies.
- v) ...price derivative securities, including options and futures, and construct dynamic hedging portfolios based on quantitative techniques such as Binomial Trees, the Black-Scholes Formula, and (time permitting) Monte Carlo simulation.

This is a class about quantitative economic models. That said, the goal is to prepare students for a job in the finance industry. We’ll do a lot of theory at first but then focus on applications.

Textbook and Materials:

Bodie, Kane, Marcus, et. al., [*Investments*](#), Canadian edition

Please shop around before you buy. This is a good book and worth owning, but I will not assign problems or reference specific page numbers so you can get away with an older (cheaper!) edition. Use the money you save to buy a subscription to the [*Wall Street Journal*](#), [*Financial Times*](#), or [*The Economist*](#). When you interview for a job in finance you will need to be fluent in basic finance terms and know what’s happening in financial markets. If you want to maximize your chances at a good job you should be reading at least one financial publication *every day*.

Lecture Notes and other references are on the [course website](#).

Software:

We will make extensive use of spreadsheet and/or statistics software in this course. Students are expected to have access to and basic familiarity with Microsoft Excel. Other statistics packages (STATA, GRETL, etc.) may be used as well but are not required.

Please note that the computer component of this class is *mandatory*. You *must* be able to make things work on a computer to get a job in finance, period.

Grading and Exams:

Grades are based on the following weighting:

Homework (approximately 6 assignments)	10%
Quizzes (3 take home quizzes using Excel)	30%
Midterm (in class, pencil & paper exam)	25%
Final Exam	35%

The midterm date will be finalized in the next couple of weeks (I’d ideally like to hold it on October 19th but we’ll need more than 1 hour). For the final please see [Western’s exam schedule](#).

Homework assignments are given approximately biweekly. You are allowed (in fact, encouraged) to do and submit homework in groups of up to four students. Most jobs in modern finance will require you to work with a team. I can't emphasize this enough: You will not get a god job without excellent communication skills. I don't care if you're really smart, I don't even care if you've got good social skills. You need to be able to discuss and tackle technical problems in a group situation. Use the homework assignments in this and other classes as practice. Also, one of the best ways to check or improve your own understanding of a problem or concept is to explain it to someone else. You are sitting in a room with your future colleagues – start building that professional network now!

That said, absolutely no collaboration between students is allowed on quizzes or exams. So while you work as a team on homework, make sure that each person knows how to do each problem (including the computer work) individually. By far the most common thing I hear from a student after s/he bombs the midterm is “but I understood this when we did it in our homework group”. *Understanding* a problem conceptually is not the same thing as being able to actually *solve* it.

Exams: The Midterm and Final are in-class, closed-book, closed-notes (and closed-neighbor!) exams. You are allowed one 8.5 by 11 inch sheet of notes for the midterm, two for the final. You should bring a writing instrument (I *highly* suggest pencil & eraser) and a hand calculator. Note sheets and calculators may *not* be shared between students. You may use fancy engineering calculators but only for arithmetic operations (four functions plus powers, square roots, $1/x$, etc.); graphing or user-defined programs are not allowed. Devices capable of sending or receiving wireless signals must be turned off or stored with other personal belongings in the back of the room (or other designated area) prior to the exam start. Such devices may NOT be used as calculators or for any other purpose during the exam.

How to prepare: I will publish sample exams (ordinarily previous years' exams, including solutions) before the actual midterm and final. Find a quiet, isolated spot and work the exam *yourself* in a 'simulated test' situation (use only your cheat sheet and calculator, and time yourself). Do this *before* discussing the exam with your homework group!

Learning quantitative material is a lot like running. I can talk to you all day about training, diet, and how to prepare yourself for a race. At the end of the day, though, the only way to get faster is to get out there and run. A lot of students try to study by carefully reading through class notes and/or a textbook. That's ok, but it's a lot like if I (I'm in pretty bad shape currently) were to read every issue of *Runner's World* ever published and then immediately go run a marathon and expect to break a world record (or even to finish). *Study for this class by working problems!*

Topics Covered (tentative, subject to change)

Week 1: Review of statistics for finance, Asset returns, Portfolios, Risk and Uncertainty, Quadratic Utility

Week 2: Mean-Variance Investing, Sharpe Ratio, Capital Allocation with one risky asset, Multiple risky assets and the Separation Theorem

Week 3: Credit Constraints, Efficient Frontiers, The Covariance Property of Efficient Portfolios (aka regression representation of the Efficient Frontier), The “Two Fund” Spanning Theorem

Week 4: Arbitrage, Equilibrium, CAPM

Week 5: Zero Beta CAPM, Applications to risk management, Statistical factor models, Estimation with real data

Week 6: Efficient Markets Hypothesis, Arbitrage Pricing Theory (APT)

Week 7: **Midterm Exam**

Week 8: The Value Premium, Fama and French (three- and five-factor versions), Momentum and Fund Performance

Week 8: Equities, Present Value, Discounted Cash Flow (DCF) Models, P/E Ratios, Value versus Growth revisited

Week 9: Dividend Policy, Shareholder Incentives, Modigliani & Miller, Return Predictability

Week 10: Fixed Income Pricing and Trading, Bond Arbitrage

Week 11: Term Structure of Interest Rates, Forward Rates, Fama-Bliss Regressions

Week 12: Forward Contracts, Futures Exchange, Hedging and Basis Risk, Spot-Futures Parity, Term Structure (Backwardation and Contango)

Week 13+: Options Pricing, Binomial Trees, Black Scholes Formula, Other Derivatives

Please Note
Department Policies for 2016 – 2017

Remember that the University expects all students to take responsibility for their own academic Programs. Also remember to check your registration to make sure you are enrolled in the correct courses.

1. Guidelines and policies for the Faculty of Social Science and the Department of Economics are posted online in the current Western Academic Calendar at <http://westerncalendar.uwo.ca>.
2. Students must familiarize themselves with the “Rules of Conduct for Examinations” <http://westerncalendar.uwo.ca/2016/pg136.html>.
3. **Cheating as an academic offence:** Students are responsible for understanding what it means to “cheat”. The Department of Economics treats cheating incidents very seriously and will investigate any suspect behavior. Students found guilty will incur penalties that could include a failing grade or being barred from future registration in other economics courses or programs. The University may impose further penalties such as a notation on your official academic transcript, suspension or expulsion.
4. **Plagiarism:** Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge it by using quotation marks where appropriate and referencing with footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the current UWO Academic Calendar at <http://westerncalendar.uwo.ca/2016/pg113.html>).

The University of Western Ontario uses software to check for plagiarism and students may be required to submit their written work in electronic form. Those found guilty will have penalties imposed as noted in point 3.

5. It is Department of Economics policy that **NO** assignments be dated, stamped or accepted by staff. Students are responsible for submitting assignments in class or to the instructor during office hours.
6. When appealing a mark, students should refer to the University’s Procedures in the current UWO Academic Calendar (<http://westerncalendar.uwo.ca/2016/pg112.html>). Please note the relevant deadlines.

The Department will not consider any appeal unless an attempt has been made to settle the matter first with your instructor. If after this discussion you remain dissatisfied with a grade or other decision, you may proceed with a written appeal (e-mails are not acceptable) to the Undergraduate Director in Economics, stating the reasons for your appeal. A useful form and checklist is provided at (http://economics.uwo.ca/undergraduate/program_counselling/responsibilities_policies.html#appeals).

7. Systematic adjustments of a class grade distribution (either up or down) can occur in Economics courses. The fact that grades have been adjusted is **not** grounds for an appeal.
8. Note the following add and drop deadlines:

Last day to **add** a first term half course:
Friday, September 16th, 2016

Last day to **drop** first term half course without academic penalty:
Monday, November 7th, 2016
9. Faculty of Social Science policy states that oversleeping or misreading an exam schedule is not an excuse for a make-up. This rule applies to all mid-term tests and final exams in the Department of Economics.

Policy Regarding Makeup Tests and Final Examinations

*Academic accommodation will **not** be granted automatically on request. You **must** demonstrate by documentation that there are **compelling** medical or compassionate grounds before academic accommodation will be considered.*

If you decide to write a test or an examination, you must be prepared to accept the mark you earn. Rewriting tests or examinations, or having the value of the test or examination reweighted on a retroactive basis, is **not** permitted. Book airline flights after you know the dates of your final examinations. Airline flights must not conflict with test or final exams.

If you are requesting a makeup test for a midterm or a final examination, unless medically incapable, notify your instructor by email or phone, preferably prior to the scheduled date of the test, but definitely within **24 hours** of the date of the test or exam. Failure to follow this procedure may result in denial of a request for academic accommodation or result in a grade of zero. Set up an appointment as soon as possible to meet personally with your instructor. If the instructor is not available, you may send an email message, copying the Undergraduate Coordinator at econugrd@uwo.ca (Social Science Room 4075). **Notifying your instructor of a missed test or exam does not automatically entitle you to a makeup test.**

Students who seek a makeup test or examination must provide medical or other relevant verification that their absence from a regularly scheduled test or examination is beyond their control. Documentation must support your reasons. Medical documentation should be given to the Academic Counselling Office of your *home* Faculty **as soon as possible (preferably within 24 hours of the test)** if you know you may not be able to write your final examination on the scheduled day and time. Failure to follow this procedure, or to provide supporting documentation, may result in denial of a request for academic accommodation or result in a grade of zero. If your documentation is not acceptable, you will be given a zero for the missed test.

For personal illness, if you consult Student Health Services regarding your illness or personal problem, you should request a Student Medical Certificate from the physician. If you were seen by an off-campus doctor, obtain a certificate from his/her office at the time of your visit. The off-campus medical certificate form must be used and can be found at: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf. Notes stating "For Medical Reasons" are not considered sufficient.

For any other circumstances, if you are not sure what documentation to provide, ask your Academic Counsellor. If your documentation is judged sufficient, the Academic Counsellor will issue a Recommendation for a Special Examination (a single form for midterms or a triple color form for final examinations). Once you have this form, contact your instructor as soon as possible to make arrangements. Even if approved from your home faculty Academic Counsellor, there is no guarantee that you will be allowed to write the makeup test and exam.

For final examinations, you need permission from your *home* Faculty Counsellor, your instructor, and the Department Undergraduate Director. Failure to follow this procedure may result in an examination grade of zero. You must ensure that the Special Examination form has been signed by the instructor and Department Undergraduate Director and that the form is returned to the Academic Counselling Office for approval without delay. Make-up final examinations, if permitted, will be written within one month of the end of the exam period.

Policies Regarding Academic Accommodation

Information about the Faculty of Social Science's policies regarding academic accommodation is found on its website at <http://counselling.ssc.uwo.ca/procedures/havingproblems.asp> or in Social Science Room 2105. Your "Academic Rights and Responsibilities" are also outlined in the current UWO Calendar at <http://westerncalendar.uwo.ca/2016/pg111.html>. Claiming that "you didn't know what to do" is not an acceptable excuse for not following the stated procedures.

Policy Regarding Class Attendance

If your instructor views your class attendance as unsatisfactory, you can be prohibited from writing the final examination. If there is intent to make use of this University policy, you will be notified in writing.

Statement on Mental Health and Support Services

If you or someone you know is experiencing emotional/mental distress, there are several resources here at Western to assist you. Please visit <http://www.uwo.ca/uwocom/mentalhealth/> for more information and a complete list of resources, as well as how to obtain help.