

**Economics of Derivatives
ECONOMICS EC3333B-001
Department of Economics
Western University**

January 2025

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Office hours: *Tuesday 9-11am*
Delivery mode: *In-person*
Meeting time(s): *Tuesday 12:30-3:30pm*
Classroom: *TC-203*
Course website: <https://westernu.brightspace.com/>
Undergraduate inquiries: 519-661-3507 or SSC Room 4075 or econugrd@uwo.ca

Registration:

You are responsible for ensuring you are registered in the correct courses. If you are not registered in this 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://student.uwo.ca>. If you notice a problem, please contact your home Faculty Academic Counsellor immediately.

Prerequisite/Antirequisite Note:

The prerequisite(s) for this course is (are) **Economics 2181, Economics 2220, Economics 2223, Economics 2260 and Economics 3332**
The antirequisite(s) for this course is (are) **Business Administration 4413, Financial Modelling 2557, MOS 3312 and MOS 4312**

You are responsible for ensuring that you have successfully completed all course prerequisites, and that you have not taken any anti-requisite courses. Lack of prerequisites 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.

Course Description:

This is an intermediate course on derivatives securities that emphasizes practical applications. Topics include valuation models of derivatives (futures, forwards, options and swaps), stochastic

processes, trading strategies using derivatives, the Greeks and portfolio management, and if time permits, real options and project evaluation.

Course Objectives:

This course offers a deeper look at derivative securities. Its objective is to provide students with a solid basis to understand and use derivative securities in portfolio construction and management. Topics include hedging strategies, valuation of options, the Black-Scholes-Merton model and the Greek letters.

Course Learning Outcomes:

After successful completion of this course, students should be able to:

1. Evaluate risk-return trade-offs in financial markets
2. Understand optimal portfolio allocation strategies
3. Understand the use of financial derivatives in hedging portfolios
4. Be comfortable with using the Black-Scholes-Merton model
5. Have some practice with practical applications to portfolios

Textbook and Other Learning Materials

Required textbook: Hull, J., (2022), Options, Futures, and Other Derivatives, 11th Edition, Pearson. ISBN-13: 9780136939917.

The textbook costs can be found here: <https://www.pearson.com/en-us/subject-catalog/p/options-futures-and-other-derivatives/P200000005938/9780136939917>

Students are welcome to purchase second-hand or earlier editions of this textbook.

Suggested textbooks:

Students should consider reading the following books to support their learning and for future reference:

Berk, J., DeMarzo, P., and Stangeland, D. (2018), Corporate Finance, 4th Canadian Edition, Pearson Canada. ISBN-10: 0134632281

Campbell, J. (2017), Financial Decisions and Markets: A Course in Asset Pricing, 1st Edition, Princeton University Press. ISBN-10: 0691160805.

Cochrane, J. (2005), Asset Pricing, Revised Edition, Princeton University Press. ISBN-10: 0691121370.

Poitras, G. (2004), Security Analysis and Investment Strategy, 1st Edition, Wiley-Blackwell. ISBN-10: 9781405112482

Assessments and Grading:

The final course mark will be calculated based on the following:

Assignments: 40%

Midterm: 25%

Final Exam: 35%

There will be 5 assignments with the following due dates: Jan 21, Feb 4, Feb 25, March 11, April 1. The top 4 out of 5 assignments will be used in the calculation of the final grade. Due to the flexibility in this assessment, academic consideration through self-attestation will be denied. Assignments are due at the beginning of the lecture on the due date. Late assignments will receive a 10% penalty per day and will not be accepted more than one week late.

The two examinations (Midterm and Final Exam) will be closed book with the exception of students being permitted to bring a hand-written formula sheet. This is a double sided page, a page refers to a letter size page (215.9×279.4 millimeters or 8.50×11.00 inches), which may only contain formulas. Students are also permitted to use a non-programmable calculator. Students may not use any other resources or outside assistance during exams. Both examinations will be 3 hours in duration and consist of a combination of calculation and long-form written responses.

The midterm is tentatively scheduled for February 25 during the scheduled lecture time (subject to approval by Exam Central). The final exam will be scheduled by the Registrar's Office during the exam period.

The midterm is designated as not permitting the use of self-attestations by students.

Topics to be covered: (time permitting)

- Futures and hedging strategies using futures
- Interest rates and swaps
- Options usage and pricing (Black-Scholes, Binomial)
- Portfolio risk measures
- Estimating correlations and volatility
- The Greek letters and applications to portfolio management
- Credit risk
- Counterparty risk

Professionalism, Privacy, and Copyright:

- Students are expected to follow the [Student Code of Conduct](#).
- All lectures and course materials, including slides, presentations, outlines, and similar materials, are protected by **copyright**. Students may take notes and make copies of course materials for their own educational purposes only.

- Students may not record lectures, reproduce (or allow others to reproduce), post or distribute lecture notes, assessments, or any other course materials publicly and/or for commercial purposes without written consent of the instructor.
- Recordings (audio or video) are not permitted without explicit, written permission of the instructor. Permitted recordings may not be distributed or shared.

PLEASE NOTE DEPARTMENT & UNIVERSITY POLICIES FOR WINTER 2025

The University expects all students to take responsibility for their own Academic Programs. Students should also check their registration to ensure they are enrolled in the correct courses.

1. **Guidelines, policies, and your academic rights and responsibilities** are posted online in the current Western Academic Calendar at: <http://westerncalendar.uwo.ca>. Claiming that “you didn’t know what to do” is not an acceptable excuse for not following the stated policies and procedures.
2. A [*new academic consideration and flexibility in assessment*](#) policy is in effect starting September 2024. Students can miss one assessment per course per term without medical documentation. Faculty can designate one assessment per course for which students **cannot** self-attest.
3. Students must familiarize themselves with the “**Rules of Conduct for Examinations**” http://www.uwo.ca/univsec/pdf/academic_policies/exam/administration.pdf.
4. **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 suspension or expulsion.
5. **Plagiarism:** Students must write their essays and assignments in their own words. When taking an idea/passage from another author, it must be acknowledged with quotation marks where appropriate and referenced with footnotes or citations. Plagiarism is an academic offence (see Scholastic Discipline for Undergraduate Students in the Western Calendar at http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_20).

Western University uses software to check for plagiarism and students may be required to electronically submit their work. Those found guilty will be penalized as noted in point 4.

6. It is a Department of Economics policy that **NO** assignments be dated, stamped or accepted by staff. Students must submit assignments to the instructor.
7. **Appeals:** University policies and procedures for appealing a mark can be found in the Student Academic Appeals section in the current Western Academic Calendar at:

http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_14. **Please note the relevant deadlines.**

Department of Economics procedures for appealing a mark can be found here: https://economics.uwo.ca/undergraduate/program_counselling/responsibilities_policies.html#appeals. The Department will not consider an appeal unless an attempt has been made to settle the matter with the instructor first. Students who remain dissatisfied with the outcome may proceed to submit an appeal to econugrd@uwo.ca. Please follow the instructions and use the appeal form shown in the above link.

8. **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.
9. **ADD AND DROP DEADLINES:**

- Deadline to **ADD** second term full or half course: **January 14, 2025**
- Deadline to **DROP** second term full or half course: **March 31, 2025**

Policy Regarding Makeup Tests and Final Examinations

Faculty of Social Science policy states that oversleeping or misreading an exam schedule is NOT grounds for a makeup. This rule applies to midterm and final exams in the Department of Economics.

Policies Regarding Academic Accommodation

- Academic accommodation will not be granted automatically on request. Students must demonstrate by documentation that there are compelling medical or compassionate grounds before academic accommodation will be considered. The Faculty of Social Science's policies on academic accommodation are found at https://counselling.ssc.uwo.ca/procedures/academic_consideration.html
- **Accommodation for Students with Disabilities:** Students with disabilities or accessibility challenges should work with Accessible Education (formerly SSD, see http://academicsupport.uwo.ca/accessible_education/index.html), which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: [Academic Accommodation for Students with Disabilities](#).
- **Rewriting Exams and Retroactive Reweighting are NOT Permitted:** Students who proceed to write a test or examination must be prepared to accept the mark. Rewriting tests or examinations, or retroactive reweighting of marks, is **not** permitted. Students must also book travel arrangements AFTER final exam dates have been posted as they must not conflict with test or final exams.
- Unless medically incapable of doing so, students must notify their instructor prior to the

test date or at least within **48 hours** when requesting a makeup exam. Failure to follow this procedure may result in denial of academic accommodation and a grade of zero. Students should also set up an appointment as soon as possible to meet with their instructor. If the instructor is not available, send an email message to the instructor, copying the Undergraduate Coordinator at econugrd@uwo.ca. **Notifying instructors of a missed exam does not automatically entitle students to a makeup.**

- For medical illnesses, students may consult Student Health Services and request a Student Medical Certificate from the physician. If assessed by an off-campus doctor, students must obtain a certificate from his/her office at the time of the visit/assessment. Student Medical Certificate (SMC) is available here:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medical_certificate.pdf
- **Documentation for Accommodation:** Individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds or for other reasons.
- **Western University policy on Consideration for Student Absence** is available here:
https://counselling.ssc.uwo.ca/procedures/academic_consideration.html
- **Religious Accommodation:** Students should consult the University's list of recognized religious holidays and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the 2024 Diversity Calendar available at <https://www.edi.uwo.ca/> (see bottom right of page).

Policy Regarding Class Attendance and Engagement: If the instructor deems a student's attendance or engagement in the class to be unsatisfactory, that student may be prohibited from writing the final examination. Examples of unsatisfactory class engagement include frequent absences from an in-person or synchronous online class, lack of assignment submissions, and inadequate use of online course materials. Instructors who intend to make use of this policy will notify the student in advance.

Statement on Gender-Based and Sexual Violence: Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website: [Get Help](#). To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Statement on Mental Health and Support Services: Students who are in emotional/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.

Statement on Remote Proctoring: While Western intends to hold most classes, mid-terms and finals in-person, the London-Middlesex Health unity may require western to teach in a remote format. If this occurs, all assessments will be done remotely and may involve the use of remote

proctoring software (i.e., Proctorio, ProctorTrack). Instructors will provide information on the details should the need arise.