



**MOS3312A 570**  
**Derivative Securities Markets**  
**Fall 2025**

Instructor: Dr. Grigori Erenburg  
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**Course Information**

**Mode of Instruction:** In Person

**Calendar Description:**

This course studies derivative securities such as Forwards, Futures, Options, SWAPs. Topics include an introduction to the institutions and pricing of derivative securities in commodity, interest rate, foreign exchange markets, the use of derivative securities for hedging, speculation, and arbitrage, and their role as a stabilizing mechanism in the economy.

**Pre-requisite(s):** Economics 2300A/B, Management and Organizational Studies 3310A/B, and enrolment in BMOS, or Honours Specialization in Financial Economics, or Major in Finance.

**Anti-requisite(s):** Management and Organizational Studies 4312A/B.

**Extra Information:** 3 lecture hours.

**Course Weight:** 0.50

**Breadth:** CATEGORY A

**Subject Code:** MOS

Notice: Unless you have either the requisites for this course (fulfilment of pre-requisites, no anti-requisite conflicts), or special permission from your Dean to enrol in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

## MOS 3312A: Derivative Securities Markets

### Section 570

### Fall 2025

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#### Course Description

This course studies derivative securities such as Forwards, Futures, Options, and Swaps. Topics include an introduction to the institutions and pricing of derivative securities in commodity, interest rate, and foreign exchange markets, the use of derivative securities for hedging, speculation, and arbitrage, and their role as a stabilizing mechanism in the economy.

#### Learning Outcomes

By the end of the semester, successful students will be able to:

- explain the fundamentals of options, futures, swaps, and other derivative securities
- explain the general structure of derivative securities markets, price determination, and uses of the derivative securities
- apply derivative securities pricing models to real world data

#### Prerequisites

Econ 2300A/B, MOS 3310A/B, and enrolment in BMOS, or Honours Specialization in Financial Economics, or Major in Finance.

#### Antirequisite

MOS 4312A/B.

*Unless you have either the requisites for this course or written special permission from the Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.*

#### Teaching Methodology and Expectations

The course will use combination of “flipped classroom” and traditional formats. The students will have video, Power Point and Voice Thread material (in addition to the textbook and homework) assigned to them to study before we meet in class. This will be followed by the online quiz. In the first class during the week, we will discuss quiz and other material related to the chapter. During the second class I walk through the Excel team project that will be due by the end of each week.

This course begins on Monday, September 8 and continues through Monday, December 8, honoring [all important dates](#) derived from University approved guidelines and academic policies.

## Required Materials

Fundamentals of Futures and Options Markets, 7<sup>th</sup> edition by John Hull. Pearson/Prentice Hall, 2008. A new edition of this book is available in two electronic versions, perpetual subscription or 180 days subscription. [Here is the direct link](#) to the bookstore materials (hardcopy UWO bookstore price C\$239.70, ebook 180 Day Rental price C\$68.00). However, the updates are not essential for this course, and the new edition is quite expensive. Therefore, we will use the 7<sup>th</sup> edition.

## Additional Materials

The Wall Street Journal or other financial newspapers or sources (off-line or online).

## Grading

The grading will be based on curve. The following assignments and exams will constitute your grade for the course.

Academic Integrity Tutorial	pass
Mid-Term	31%
Final Exam (cumulative)	31%
Team Projects (Excel)	24%
Quizzes (weekly)	14%

- The students will not be allowed to pass the course without passing [Academic Integrity Tutorial](#) and submitting Academic Integrity Certificate.
- I will drop the lowest one of the total number of quizzes available (e.g. I will take the best 5 out of 6 quizzes).
- Academic consideration for midterm requires submission of formal supporting documentation.
- If an emergency occurs that requires academic consideration, instructor must be notified immediately, **via email**. In addition, documentation must be submitted by the student directly to the Academic Dean's Office. Once the petition and supporting documents have been received and assessed, appropriate academic accommodation shall be determined by the Dean's Office in consultation with the student's instructor. For medical emergencies, please refer to the [Policy on Accommodation for Medical Illness](#).

## Assignments

### *Projects*

In the past, one of the projects was a derivatives trading project. However, that project is much more relevant for investments course (MOS3316), so I replaced it with Excel-based projects more relevant to the Derivatives course. Those who still want to practice with trading and investments are encouraged to apply and become members of the King's Student Investment Club (King's Capital Management) created specifically to learn and practice the investments. The Club is not associated with this course, but I assist and counsel the Club.

### *Homework*

Each chapter comes with the recommended end-of-chapter questions from the textbook and questions prepared by the instructor. The assignments will not be marked. However, working on homework questions diligently proves to be very rewarding on exams and helps in participating in the course.

### *Quizzes*

I will assign weekly quizzes to assess and review the material covered over the corresponding week.

### **Learning Management System OWL**

I will use OWL throughout the course to post your homework assignments, classroom handouts, as well as exam dates and project deadlines.

### **Participation and Attendance**

Regular class attendance and participation is vital to the learning process and is required. Students should come to class prepared enough to effectively participate. Students are asked not to come to class late or leave early.

According to the School of MEM policy, missing 25% of scheduled classes is too frequent. A warning email will be issued at the 20% point, and if absences continue, the instructor will implement the King's attendance policy below:

*“A student may be debarred from writing the final exam for failure to maintain satisfactory academic standing throughout the year. Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean of the Faculty offering the course, after due warning has been given. On the recommendation of the department concerned, and with the permission of the Dean of that Faculty, the student will be debarred from taking the regular examination in the course.”*

### **Academic Misconduct**

- Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of [what constitutes a Scholastic Offence](#).
- *Within this course, use of artificial intelligence (AI) tools such as ChatGPT is not permitted for written work submitted for evaluation. Unauthorized use of AI will be subject to academic discipline.*

### **Students' Counseling and Support Services**

Please visit the [web site](#) for Registrar's Service at King's University College, and Counselling and Student Development Services.

*Please note that this syllabus is a tentative schedule for the course. All items including grading, assignments and material to be covered are tentative and subject to change. All the changes in schedule and deadlines will be announced in class in advance. Students are responsible for learning about these changes.*

### Tentative Course Schedule (subject to change)

Weeks	Topics and Events	Assignments
September 9, 10	Chapter 1, Introduction <ul style="list-style-type: none"> <li>A first look at futures, forward, and options markets</li> </ul>	
<b>Names of the team members for the project are due</b>		
September 15, 17	Chapter 2, Mechanics of Futures Markets <ul style="list-style-type: none"> <li>Convergence of futures price to spot price</li> <li>Margins</li> <li>Types of traders and types of orders</li> </ul>	Quiz 1 Excel project 1
September 22, 24	Chapter 3, Hedging Strategies Using Futures <ul style="list-style-type: none"> <li>Basis risk and cross hedging</li> <li>Stock index futures</li> <li>Rolling the hedge forward</li> </ul>	Quiz 2 Excel project 2
September 29 October 1	Determination of Forward and Futures Prices, Chapter 5 <ul style="list-style-type: none"> <li>The basic cost of carry model</li> <li>Futures on assets producing income</li> <li>Pricing of commodity futures</li> </ul>	Quiz 3 Excel project 4* (project 3 will not be assigned)
October 6, 8	Interest Rate Futures, Chapter 6 <ul style="list-style-type: none"> <li>Treasury bond futures</li> <li>Eurodollar futures</li> <li>Hedging strategies using interest rate futures</li> </ul>	Quiz 4 Excel project 5
October 13, 15	Swaps, Chapter 7 <ul style="list-style-type: none"> <li>Mechanics of interest rate swaps</li> <li>Valuation of interest rate swaps</li> </ul>	Quiz 5 Excel project 6
October 20, 22	Mechanics of Options Markets, Chapter 9 <ul style="list-style-type: none"> <li>Options basics</li> <li>Options trading, margins and transaction costs</li> </ul>	<b>Midterm October 22</b> <b>(Chapters 1-3, 5-7, and 9)</b> <i>(make-up is Friday, October 31)</i>
October 27, 29	Properties of Stock Options, Chapter 10 <ul style="list-style-type: none"> <li>Factors affecting option prices</li> <li>Upper and lower pricing bounds and put-call parity</li> <li>Early exercise</li> <li>Effect of dividends</li> </ul>	Quiz 6
November 3, 5	<i>Fall Reading Week</i>	
November 10, 12	Trading Strategies Involving Options, Chapter 11 <ul style="list-style-type: none"> <li>Spreads</li> <li>Combinations</li> </ul>	Excel project 7 Quiz 7

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November 17, 19	<p>Introduction to Binomial Trees, Chapter 12</p> <ul style="list-style-type: none"><li>• Arbitrage derivation of a one-period BOPM</li><li>• Risk-neutral valuation</li><li>• Recursive solutions</li><li>• Accommodating early exercise in the BOPM framework</li></ul>	<p>Excel project 8 Quiz 8</p>
November 24, 26	<p>The Black-Scholes Model, Chapter 13</p> <ul style="list-style-type: none"><li>• Estimating volatility</li><li>• The Black-Scholes option-pricing formulas</li><li>• Valuing options on dividend-paying stocks</li><li>• Valuation of stock index options</li></ul>	<p>Excel project 9 Quiz 9</p>
December 1, 3	<p>The Greek Letters, Chapter 17</p> <ul style="list-style-type: none"><li>• Introduction to option Greeks</li><li>• Delta hedging and portfolio deltas</li></ul>	<p>Excel project 10 Quiz 10</p>
December 11-22	<b>Final Exam (specific date TBA)</b>	

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# KING'S UNIVERSITY COLLEGE

## GENERAL COURSE POLICIES

### 2025-2026

#### **1. Academic Accommodations, Consideration for Absences**

##### **Academic Accommodation (Accessibility)**

Accessibility Services works to ensure that academic programs are accessible to all students, and supports students who may have a condition related to, but not limited to, vision, hearing, mobility, different ways of learning, mental health, chronic illnesses, chronic pain, autism spectrum disorder, ADD/ADHD, and temporary conditions (beyond short-term academic consideration). Accessibility Services provides recommendations for accommodation based on medical documentation or psychological and cognitive assessment. The accommodation policy can be found here [Academic Accommodation for Students with Disabilities](#). Information on Accessibility Services at King's can be found [here](#).

##### **Academic Consideration for Student Absence**

If a student is unable to meet a course requirement due to substantial but temporary extenuating circumstances (medical or compassionate), they should follow the procedures below.

In some cases, where instructors have built flexibility into their assessments, this flexibility will already address consideration needs.

Requests for academic consideration should be directed to the Academic Advising Office of your faculty/college of registration. Requests must be made as soon as possible and no later than 48 hours after the missed assessment.

As a rule, documentation is required for academic consideration. For academic consideration requests on medical grounds, the Student Medical Certificate is available at [https://www.kings.uwo.ca/kings/assets/File/currentStudents/courses\\_enrollment/exams\\_and\\_tests/SMC-Feb-2025.pdf](https://www.kings.uwo.ca/kings/assets/File/currentStudents/courses_enrollment/exams_and_tests/SMC-Feb-2025.pdf).

Students are permitted one academic consideration request without supporting documentation per term per course.

Instructors may designate one assessment per half-course weight as requiring formal supporting documentation. Please refer to the course outline for each course.

For further information, please see:

[https://uwo.ca/univsec/pdf/academic\\_policies/appeals/academic\\_consideration\\_Sep24.pdf](https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf)

##### **Absences from Final Examinations**

If you miss the Final Exam, contact the Academic Advising Office of your faculty/college of registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, or more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

## **Religious Accommodation**

Students should consult the University's list of recognized religious holidays, and should give notice in writing to the instructor and Academic Advising Office if a course requirement will be affected by a religious holiday/observance. Notice must be given as early as possible, and no later than two weeks prior to an examination, and one week prior to a midterm test date. It is the responsibility of such students to inform themselves concerning the work done in classes from which they are absent and to take appropriate action.

## **2. Support Services**

Accessibility, Counselling and Student Development at King’s University College:

<https://www.kings.uwo.ca/current-students/student-services/>

Students experiencing emotional or mental health distress can access services at King’s University College: <http://www.kings.uwo.ca/current-students/campus-services/student-support-services/personal-counselling/>

Good2talk is a good online and phone 24/7 resource for students and is available in English, Mandarin, and French: <https://good2talk.ca>, 1-866-925-5454

MentalHealth@Western provides a complete list of options about how to obtain help:

[https://www.uwo.ca/health/mental\\_wellbeing/](https://www.uwo.ca/health/mental_wellbeing/)

Academic Support Services at King’s University College:

<https://www.kings.uwo.ca/current-students/academic-resources/>

### **GBSV Support:**

King’s is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at:

<https://www.kings.uwo.ca/about-kings/safe-campus/gender-and-sexual-violence/>

You can reach someone supports at Kings by emailing [Care@kings.uwo.ca](mailto:Care@kings.uwo.ca) or calling 519-930-4640 to reach a social worker who can offer help.

You can also reach Western’s Gender-Based Violence & Survivor Support Case Manager by [email](#) or by calling 519-661-3568.

Further supports can be found on this website: <https://www.kings.uwo.ca/about-kings/safe-campus/gender-and-sexual-violence/>

See also [https://www.uwo.ca/health/student\\_support/survivor\\_support/get-help.html](https://www.uwo.ca/health/student_support/survivor_support/get-help.html)

University Students' Council offers many valuable support services for students, including the health insurance plan: <http://westernusc.ca/services/>

### 3. Statement on Use of Electronic Devices

**Use of Electronic Devices:** Unless explicitly stated otherwise, you are not allowed to have a cell phone, or any other electronic device, with you during tests or examinations. Unauthorized possession of such a device during a test or examination constitutes an academic offence.

**Use of Laptops, Tablets, and Smartphones in the Classroom:** King's University College at Western University acknowledges the integration of new technologies and learning methods into the curriculum. The use of electronic devices such as laptop computers, tablets, or smartphones can contribute to student engagement and effective learning. At the same time, King's recognizes that instructors and students share jointly the responsibility to establish and maintain a respectful classroom environment conducive to learning.

The use of electronic devices by students during lectures, seminars, labs, etc., shall be for matters related to the course at hand only. Students found to be using electronic devices for purposes not directly related to the class may be subject to sanctions under the Student Code of Conduct; see <https://www.kings.uwo.ca/current-students/student-affairs/code-of-student-conduct1/>

Inappropriate use of electronics (e.g., laptops, tablets, smartphones) during lectures, seminars, labs, etc., creates a significant disruption. As a consequence, instructors may choose to limit the use of electronic devices in these settings. In addition, in order to provide a safe classroom environment, students attending in-person class sessions are strongly advised to operate laptops with batteries rather than power cords.

### 4. Statement on Academic Offences

King's is committed to academic integrity. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, is posted at

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

It is expected that students will submit work that is truly their own, completed without external assistance (human or artificial) except as explicitly permitted by the course instructor. Check with your instructor on what tools, including generative AI (ChatGPT, translation tools, grammar-checking tools) are permitted in the course. Because a tool is permitted in one course, that does not mean it is permitted in other courses.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system; see <https://elearningtoolkit.uwo.ca/tools/Originality Reports - TurnItIn.html>.

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

### **5. Copyright of Course Material**

Lectures and course materials, including PowerPoint presentations, tests, outlines, and similar materials are protected by copyright. Faculty members are the exclusive owner of copyright in those materials they create. Students may take notes and make copies for their own use. Students may not allow others to reproduce or distribute lecture notes and course materials publicly (whether or not a fee is charged) without the express written consent of a faculty member. Unauthorized sharing of class content is subject to academic discipline.

Similarly, students own copyright in their own original papers and exam essays. If a faculty member wishes to post a student's answers or papers on the course website, they should ask for the student's written permission.

### **6. Use of Recordings**

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation and/or the participant has the prior written permission of the instructor. Unauthorized recording and/or sharing of class content is subject to academic discipline.

### **7. Policy on Attendance**

Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean of the Faculty offering the course, after due warning has been given. On the recommendation of the department concerned, and with the permission of the Dean of that Faculty, the student will be debarred from taking the regular examination in the course.