

FIN*3200
Fundamentals of Derivatives
Winter 2025
0.5 Credits

General Course Information

Instructor: Fred Liu
Email Fred.liu@uoguelph.ca
Office Location MacKinnon 714
Office Hours TBA
Department/School Department of Economics and Finance

Class Schedule: Tuesday, Thursday 2:30PM - 3:50PM

Pre-requisites: ECON*2310, (ECON*2560 or FIN*2000)

Restrictions: FARE*4240

Course Description

This course provides an introduction to the analysis of financial derivatives. It covers the theory and application of forwards, futures, options, and swaps, and explains how these instruments can be used for purposes such as investment, hedging risk, arbitrage and speculation.

The readings will consist of the recommended textbooks and lecture notes. All materials, including lecture notes, will be posted on CourseLink or distributed in class.

Most topics will use mathematical calculations and graphs. Strong math skills are essential for this course. Students should be familiar with (or start working hard on) the following concepts:

- Solving systems of equations;
- Derivatives of a function, partial derivatives;
- Linear regression analysis;
- Discrete and continuous probability distributions;
- Limit of a function;
- Variance, covariance, correlation, etc.

Additionally, it is recommended that students are familiar with fundamental finance concepts such as cash flow discounting, bond pricing, and the Capital Asset Pricing Model.

Summary of Course Content and Materials

- Introduction: Ch. 1
- Structure of futures markets: Ch. 2
- Hedging with futures: Ch. 3
- Interest rates: Ch. 4
- Forward and futures price determination: Ch. 5
- Swaps: Ch. 7
- Securitization and the Credit Crisis: Ch. 8
- Options markets: Ch. 10
- Properties of stock options: Ch. 11
- Options trading strategies: Ch. 12
- Pricing options with binomial trees: Ch. 13
- Black-Scholes-Merton Model: Ch. 15
- Options on Stock Indices and Currencies: Ch. 17
- Options on Futures: Ch. 18
- Greek Letters: Ch. 19
- Select topics from Ch. 16 and 20

Course Assessment

			Due Date/ location
Assessment 1:	26%	Midterm 1	February 11, 2025
Assessment 2:	26%	Midterm 2	March 20, 2025
Assessment 3:	3%	Three online quizzes via Courselink	Quiz 1: Jan. 23-24 Quiz 2: Mar 6-7 Quiz 3: April 3-4
Assessment 4:	45%	Final exam	See exam schedule
Total	100%		

Course Resources

Required Text:

“Options, Futures, and Other Derivatives, 11th Edition” by John C. Hull, Pearson, 2021. (Cost: \$67.99 for 180-rental of e-Textbook)

A core component of this course is the assigned problems. They are specific to the 11th edition of the textbook (other editions or the global edition will give you the wrong problems).

Midterm

The midterms will be held in-person in the lecture slot on the specified date. If a midterm exam is missed, then you must contact the instructor immediately. The midterm exam will not be rescheduled but depending on the circumstances the weight may be proportionally shifted to the other course assessments, including the final exam. For example, if only Midterm 1 is missed, then Midterm 2 would have a new weight of $0.26/0.74=0.3514$ or 35.14% and the exam would have a new weight of $0.45/0.74=0.6081$ or 60.81%.

Final Exam

Please also note that the in-person final exam is a cumulative exam. It covers the entire semester and all aspects of the course.

Grading Policies

Unless you have discussed an extension well ahead of the due date with the instructor, late penalties of 5% of the total grade earned per day (including weekends) will be assigned to any assessment (i.e. deducted from the total mark). Extensions will only be granted on the basis of valid medical or personal reasons, and need to be requested via email to the instructor as soon as possible. Late assignments will not be accepted once graded assignments have been returned officially to the class at large, unless circumstances permit and alternative arrangements have been made.

Students who find themselves unable to meet course requirements by the deadlines or the criteria expected because of medical or personal reasons, should review the regulations on academic consideration in the Academic Calendar and discuss their situation with the instructor, program counselor or other academic counselor as appropriate.

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds.shtml>

Missed Assignments:

A grade of zero will be assigned if you fail to submit an assignment, unless you are ill or have other compassionate reasons. Please read your Undergraduate Calendar for the regulations regarding illness and compassionate grounds. Please note, vacation travel, moving house, or outside work commitments will not be accepted as valid reasons for missing deadlines.

If you have religious observances which conflict with the course schedule or if you are registered with Student Accessibility Services, please contact the course instructor in order to make arrangements for your assessment if appropriate.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the

academic calendar for information on regulations and procedures for Academic Consideration:
<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or see the website: <https://wellness.uoguelph.ca/accessibility/>

Course Evaluation Information

Please refer to the [Blue by Explorance system](#).

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Drop date

The last date to drop one-semester courses, without academic penalty, is **Friday, April 4, 2025**. For regulations and procedures for Dropping Courses, see the Academic Calendar:

Equity, Diversity, and Inclusion Statement

At the Lang School of Business and Economics, we are committed to developing leaders with a social conscience, an environmental sensibility, and a commitment to their communities. A core tenet within this vision is that diversity is a strength with which we can experience greater connection and understanding.

As such, we affirm the importance and shared responsibility of our students, faculty, and staff creating and promoting equity and inclusion within our learning spaces. Creating these kinds of learning cultures is a process, not a destination; it requires ongoing willingness on the part of each person to thoughtfully and critically listen, unlearn, learn, and engage as they are exposed to a multitude of perspectives and lived experiences. We encourage dialogues between students and instructors to address and advance opportunities for fostering greater diversity and inclusion in the learning environment. Openness to conversations with each other enables us to reflect and grow as we learn from one another respectfully and holistically.

As a department that is training the professionals of the future, we expect our learning spaces to abide by all institutional policies and guidelines, in particular those outlined by the Office of Diversity and Human Rights and the [University of Guelph Human Rights Policy](#). Discrimination and harassment, as defined by our policies, will not be tolerated. Individuals should inform the appropriate party as per University policies if they experience any such behaviours.