

Syllabus

FIN 5241 – Derivatives Securities (1.5 Units)

Section 06 – Fall 2025 (Mini B)

Instructor:	Lorenzo Naranjo
Office:	Simon Hall 281
Office Hours:	Tuesday / Thursday (1:00pm – 3:30pm)
Email:	naranjo@wustl.edu
Classroom:	Simon Hall 108
Meeting Times:	Tuesday / Thursday 6:15pm – 9:15pm
Class Modality:	In-person

Class Information

Course Description

Covers Black-Scholes option pricing model. Provides an in-depth analysis of valuation and trading strategies for options and other derivative securities. Potential applications could include hedging, swaps, index arbitrage, corporate decision making, and financial market innovation.

Classroom Etiquette

Class time is important and I will make sure that every minute we spend in the class is productive. Therefore, any activity that prevents me or other students to use class time in a productive manner is forbidden.

Make sure to arrive on time as I will take attendance at the beginning and before each break and/or the end of each class. You have my commitment that the class will start and end on time.

! Important

No computers are allowed in class unless authorized by the instructor for a specific activity that requires the use of a computer. You can use a tablet only if you plan to take notes with it and as long as you keep your tablet horizontal at all times. The usage of an external keyboard, a computer mouse or headphones in class is also forbidden.

! Important

We are a very small section, so please do not seat in the back of the classroom, as this might affect negatively your attendance grade.

Class Materials

All class materials are available in <https://lorenzonaranjo.com/fin5241-fall25b/>. I have linked all the material we will cover in the class to Canvas.

In addition, you may complement the lecture notes with the following textbook:

- Options, Futures, and Other Derivatives by John Hull, 11th Edition, Pearson

Probably the most standard and popular text on derivatives among academics, students, and practitioners, this book serves as a useful reference not only for this course but also for years to come in your finance profession. Older editions (5th-10th) of the book are fine to use, too.

While our lectures present topics in a self-contained manner, reading the textbook will reinforce your learning from the lectures. The class covers chapters 1 to 5, and 10 to 13 from the textbook.

! Important

You will need a calculator for this class. Any scientific calculator that can compute exponential functions and logarithms should do the job. These type of calculators sell for around \$10. I do not recommend using a financial calculator since typing long expressions is hard and prone to errors. You cannot use your phone during the final exam.

Grading

Following is the summary of weights on the various components that I will use to evaluate your performance in this course:

Assignment	Weight
Problem Sets	20
Final Exam	60
Class Attendance	20

The grading scale of the class will approximately follow the table below.

Percent	Grade
90-100	A
80-89	B
70-79	C
60-69	D
59-Below	F

The precise grade cutoffs between and within letter grades will be chosen so that the average grade for the class is around 3.5 GPA. For MBA students, as per school rules no more than 20% high passes can be awarded in total.

Grades are non-negotiable. If you feel I have graded one of the course requirements incorrectly, please bring it to my attention immediately. Grade appeals (e.g., because your points were not added up correctly) must be submitted within a week after the grades are released. I certainly want all of you to receive the grades you have earned.

Attendance and Participation Policy

Class participation, interaction, and collaboration are central to learning in this course. Prompt attendance is expected for every class.

Attendance will be recorded by roll call, a sign-in sheet, or a short Canvas activity. Students who arrive more than 20 minutes late will receive half of the attendance credit for that session. Students who do not participate in required in-class activities will receive reduced or no attendance credit for that session.

To have an absence excused, students must notify the instructor as soon as possible and provide verifiable documentation (for example, a physician's note or official university documentation). Documentation should be emailed within one week of the missed class. Absences without acceptable documentation will be treated as unexcused and will not receive attendance credit.

! Important

All students are expected to attend **in person**. There will be no hybrid option via Zoom in this class except for PMBA students who have been previously authorized to attend remotely.

Problem Sets

There will be two problem sets so you can practice the concepts covered in class and that will help you prepare for the final exam. Each problem set is due at 11:59 pm CST on the dates indicated below. All problem sets are individual and must be handwritten. You must submit your work via Canvas as a PDF file. If you do not have a scanner, download a

scanner app such as Adobe Scan that allows you to scan on your phone and generate a PDF.

Assignment	Due Date
PS #1	11/25
PS #2	12/5

There is a 0.2% grade deduction per hour, i.e. 4.8% per day, for late submissions.

Final Exam

There will be a comprehensive final exam that will allow you to demonstrate your learning on each of the course units. The final exam will be held on **Tuesday, December 9 (6:15pm - 9:15pm) on SH 109**. The exam is closed-book and closed-notes. No electronic devices including computers, laptops, tablets, cellphones, smart watches and smart glasses are allowed. I will provide you with a formula sheet, and you must bring a calculator.

The exam time is non-negotiable. If you have a conflict, you must inform me by the end of the second class of the course. Hence, I encourage you to check your schedule early (e.g., make sure that the exam dates do not conflict with a religious holiday, etc.). If you think you will miss the final exam, please (1) immediately e-mail me prior to the exam time and (2) send me a justifiable and reliable proof of absence. Without clear and hard evidence, you will get no credit.

Honor Code and Code of Conduct

This course will follow the standards specified in the Code of Conduct and Code of Academic Integrity, which were presented to faculty and students of the Olin Business School. Students are expected to be familiar with the codes.

Course Schedule

The tentative course schedule for different sections is given below. The topics covered on each proposed date may change as the course progresses, but the main content and the general order should not vary.

Session	Date	Topic
1	11/13	Review on Option Payoffs and Strategies
2		The Log-Normal Distribution
3	11/18	Modeling Stock Prices in Continuous-Time
4		Stochastic Calculus and Ito's Lemma
5	11/20	The Black-Scholes Model - Replication
5		The Black-Scholes Model - Risk-Neutral
7	11/25	Options on Indices
8		Options on Currencies and Futures
9	12/2	The Greeks
10		Exotic options in Discrete Time
11	12/4	Exotic options in Continuous Time
12		Review for the Final Exam
–	12/9	Final Exam (6:15pm - 9:15pm)

Required Policies

Academic Integrity

In all academic work, the ideas and contributions of others (including generative artificial intelligence) must be appropriately acknowledged and work that is presented as original must be, in fact, original. You should familiarize yourself with the appropriate academic integrity policies of your academic program(s).

Unauthorized Recording and Distribution of Classroom Activities and Materials

The following applies to all students in my class: “Except as otherwise expressly authorized by the instructor or the university, students may not record, stream, reproduce, display, publish or further distribute any classroom activities or course materials. This includes lectures, class discussions, advising meetings, office hours, assessments, problems, answers, presentations, slides, screenshots or other materials presented as part of the course. If a student with a disability wishes to request the use of assistive technology as a reasonable accommodation, the student must first contact the Office of Disability Resources to seek approval. If recording is permitted, unauthorized use or distribution of recordings is also prohibited.”

Disability Resources

WashU supports the right of all enrolled students to an equitable educational opportunity and strives to create an inclusive learning environment. In the event the physical or online environment results in barriers to your inclusion due to a disability, please contact WashU’s Disability Resources (DR) as soon as possible and engage in a process for determining and communicating reasonable accommodations. As soon as possible after receiving an accommodation from DR, send me your WashU Accommodation Letter. Remember that accommodations cannot be applied retroactively. <https://disability.wustl.edu/>

Sexual Harassment and Assault

If you are a victim of sexual discrimination, harassment or violence, we encourage you to speak with someone as soon as possible. Understand that if you choose to speak to me as an instructor, I must report your disclosure to my department chair, dean, or the Gender Equity and Title IX Compliance Officer, which may trigger an investigation into the incident. You may also reach out to the [Relationship & Sexual Violence Prevention \(RSVP\) Center](#) to discuss your rights and your options with individuals who are not mandatory reporters. <https://titleix.wustl.edu/students/confidentiality-resources-support/>

Religious Holidays

To ensure that accommodations may be made for students who miss class, assignments, or exams to observe a religious holiday, you must inform me in writing before the end of the third week of class, or as soon as possible if the holiday occurs during the first three weeks of the semester. For more information, please see the university's [Religious Holiday Class Absence Policy](#).

Emergency Preparedness

Before an emergency affects our class, students can take steps to be prepared by downloading the [WashU SAFE App](#). In addition, each classroom contains a “Quick Guide for Emergencies” near the door.

Resources for Students

WashU provides a wealth of support services that address academic, personal, and professional needs. To start exploring resources that can help you along the way, please visit: [Resources for Students](#).