

OPTIONS & FUTURES MARKETS

FIN 430-002
SPRING 2025

Instructor: Jinghua Wang, Ph.D.

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Email: jw78@njit.edu (*the best way to contact me*)

Class Time & Location:

MW 1:00 pm – 2:20 pm FMH 306

Technology: Generative Artificial Intelligence (AI), Excel, CME Trading Simulator & Bloomberg

Prerequisite: FIN 218, FIN 315 MATH 135 (or MATH 138, MATH111)

Credits: 3 credits

Office Hours on Zoom: Tuesdays & Thursdays 4:30 pm – 6:00 pm or by appointment

Office Hours on Campus: Mondays & Wednesdays 2:30 pm – 4:00 pm or by appointment

Recall this:

What I hear, I forget.

What I see, I remember.

What I do, I understand.

COURSE DESCRIPTION

This course covers options, forward contracts, futures contracts and swaps, and will give students a working knowledge of how these contracts work, how they are used, and how they are priced. Students will learn how corporations and portfolio managers can hedge different kinds of risks or alter the distribution of returns on their portfolios using various techniques.

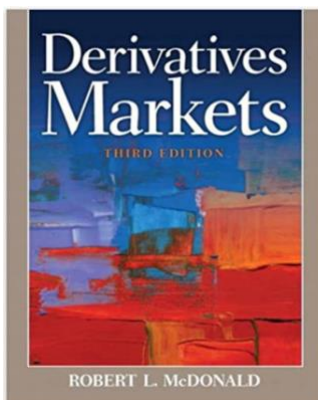
The material in this course is **quantitative and conceptually difficult**. You must stay on top of the readings and assignments or else this material can bury you.

Course Objectives

The main objective of this course is to help students gain the intuition and to provide the necessary skills for pricing and hedging of derivative securities, and for using them for investment, risk management, and prediction purposes. We discuss a wide range of applications including the use of derivatives in asset management, the valuation of corporate securities such as stocks and corporate bonds, interest rate derivatives, as well as currency derivatives. In order to provide a useful treatment of these topics in a world that is changing rapidly, it is necessary to stress fundamentals and to explore topics at a technical level. Specifically, the objective of this course is to teach students how to analyze a problem/situation involving derivatives so that they also know how to deal with a different one in the future.

Required Textbook

Derivatives Markets Robert McDonald. Pearson, 3rd Edition (ISBN 13: 978-0321543080).



Learning Outcomes

Upon successful completion of this course, you will be able to:

Course Outcome	Program Goal	Program Outcome
♣ Understand the overall derivative markets;	LC 1 Develop an Understanding of Business Concepts and the Technical Knowledge to Solve Business Problems	LO 1.1 Our students will demonstrate the knowledge and application of business fundamentals
		LO 1.2 Our students will demonstrate the ability to solve business problems using current technology
	LG 4 - Develop Ethical Reasoning Skills	LO 1 - Our students will demonstrate the ability to identify ethical dilemmas and make decisions grounded in ethical principles
♣ Explain the various derivative instruments;	LC 2 Develop Effective Communication Skills	LO 2 - Our students will demonstrate the ability to write clear and concise reports that reflect “critical thinking”
	LC 1 Develop an Understanding of Business Concepts and the Technical Knowledge to Solve Business Problems	LO 1.1 Our students will demonstrate the knowledge and application of business fundamentals
♣ Calculate the price for options, forwards and other derivative contracts; and	LC 1 Develop an Understanding of Business Concepts and the Technical Knowledge to Solve Business Problems	LO 1.1 Our students will demonstrate the knowledge and application of business fundamentals
♣ Apply the key elements in the derivative markets to make an investment decision.	LC 3 Interact Effectively in Teams	LO 3.1 Our students will demonstrate the ability to understand and use team building behaviors to accomplish group tasks
	LG 4 - Develop Ethical Reasoning Skills	LO 1 - Our students will demonstrate the ability to identify ethical dilemmas and make decisions grounded in ethical principles
	LG 5 - Acquire Technological Skills	LO 1 - Our students will demonstrate the ability to use technology for effective project management

Supplemental Book

Options, Futures, and Other Derivatives, John C. Hall, 8th edition, Prentice Hall.

ISBN-13: 978-0132777421

Recommended Reading

When Genius Failed, Roger Lowenstein, Random House

The Big Short, Michael Lewis, W. W. Norton & Company

Too Big to Fail, Andrew Ross Sorkin, Penguin Books

Options for the Beginner and Beyond: Unlock the Opportunities and Minimize the Risks, W. Edward Olmstead

The Wall Street Journal

Financial Times

Canvas & Email

The course uses the Canvas learning platform to deliver the course materials. All the lecture PowerPoints, assignments, class discussion questions, and announcements are posted in Canvas. You are responsible to check your school's email and course materials on the regular basis, upon your schedule to keep up with the progress of the course. Important announcement will be e-mailed to the class through Canvas. When you contact me, please put the course name **FIN 430 - XXX** in the subject line.

To get help on how to use Canvas, please click the link **here**. Canvas student guidebook explains every function that you use in the class. For example, announcements, quizzes, grades and so on. It's recommended that students check the email and log on the online course at least four times a week and 6 hours per week to read the chapter and complete the course assignment. Please use your NJIT's email account for the class communications.

Resources

This course uses online financial resources to facilitate the learning, such as Yahoo Finance and Google Finance. For the recommended resources, visit **Resource Center** online. Student can also find the available resources in school's library online database. Bloomberg is a great resource to gain the better understanding of the financial markets. The bonus points are open for students who gain a Bloomberg certificate in the semester. It's highly recommended that students read financial newspapers, such as

Financial Times and Wall Street Journal. To join the virtual office hours on Zoom, please follow the instruction on the last page of the syllabus.

Excel Skills

Students should be able to know the basic functions in managing the spreadsheets. Please refer to the supporting documents of using the Excel online.

COURSE REQUIREMENTS

Grading

Final grades will be based on the weights as follows:

Grading Items	Total Weights
Unit Exams	23%
Active Learning – CME Trading Challenge	15%
Lesson Quizzes	20%
Lesson Discussions	12%
Individual Assignments	15%
Week Review	3%
Class Participation/Discussion	12%
Total	100%
Bonus -Bloomberg Certificate	5%

The scale used for grading is as follows:

90% - 100%	A
85% - 89%	B+
80% - 84%	B
75% - 79%	C+
70% - 74%	C
60% - 69%	D
Below 60%	F

Attendance/Class Participation

In-class participation are credited. You are encouraged to raise questions, answer questions, and discuss topics. According to the [NJIT health and wellness regulations](#), you always have option NOT to come to the campus for this course. Should your health or other circumstances change, negatively impacting your

ability to succeed in our class, please notify me as soon as possible so that we can work together to connect you to support resources and work through possible options.

Preparing for Classes

This course requires substantial individual study and preparation. To better understand the course materials, it is strongly advised that students review textbook readings and slides after finishing a chapter and prepare for the next chapter prior to when the material is scheduled.

Lesson Quizzes

You will complete the quiz at the end of each chapter. The Quiz is the individual work and must be completed by midnight of Sunday. Please log into Canvas for the assignments and due dates. The lowest score of the quiz will be dropped.

Unit Exams

You will have three exams during the semester. You need to complete these exams and quizzes through your own efforts. Consulting others on individual quizzes and exams is prohibited. Please demonstrate your dedication to academic integrity. The lowest exam score will be dropped. Exam dates are indicated in the course calendar and will be announced in Canvas. Exams and quizzes will typically consist of multiple-choice questions, short essay questions, and quantitative problems.

If you missed an exam due to an illness, you should let me know with a doctor's note. For emergency, you will need to present relevant documentation, which must be approved by the Dean of Students and Campus Life.

Lesson Discussions

Lesson discussion postings are required of all students. Actively participating in all discussions is one of the best ways to help build a sense of community and collaboration. There will be a weekly topic that will be related to the course content or something that extends the course information to current financial market. You must participate in these weekly online discussions.

Your initial responses should be a minimum of 50 words and must be posted by **Friday at 11:59 pm**. So other students have time to read your post. You will also respond to at least one post from other students in the open discussion thread. These responses must be a minimum of 20 words. The second post must be

posted by **Sunday at 11:59 pm**. So, you need to make minimum two posts each week. Late posts are not accepted.

Week Review

At the end of each week, you will write a brief review to summarize and reflect on your learning experiences. Use this section to highlight the key aspects of the week's classroom learning that are significant to you. Please refrain from including personal anecdotes in this section. The length of the weekly review should not exceed ten lines.

Individual Assignments

You will complete three individual assignments on your own efforts. Please submit your assignments in Word or Excel in Canvas. According to the academic integrity, **your assignments will be assessed by Turnitin to check the similarity rate.** A lower similarity rate will indicate the originality of your work. Any assignment with a high similarity rate will be returned without grading.

Late assignments will not be accepted.

Active Learning - Trading Challenge

The class uses the Chicago Mercantile Exchange (CME) trading platform to conduct the derivative trading challenge. The objective of the trading challenge is to provide students with practical trading opportunities in real-time using real data and news. This allows students to gain insights into derivative trading in the real business world. You will collaborate with other students in an assigned group.

Your group will possess a virtual account with \$100,000 USD for trading futures products. These products encompass include interest rates, energy, agriculture, metals, equity indices and foreign exchange contracts. Trading discussion postings are mandatory for all students. Your initial two responses should consist of a minimum of 50 words each and must be posted by the end of the trading period. Additionally, you are expected to respond to at least one post from other students in the discussion thread in Canvas. These responses should be a minimum of 20 words. Late posts are not accepted.

Upon completing the trading, your group needs to write a formal report describing your trading performance and discussing what you would do differently if you were to retake trading. The trade period is from March 10th, 10 am to April 11th, 5 pm. The detailed description of the trading challenge will be announced in class.

Guideline for Using Artificial Intelligent

An artificial intelligence (AI) tool is not a real person but simulates human communication with users. AI tools like ChatGPT have been pre-trained on vast amounts of information. Users can benefit from these powerful tools to handle various tasks across different subjects. However, AI tools can sometimes produce plausible-sounding but incorrect information, which may mislead users in their decision-making.

Please keep in mind that it is the user's responsibility to conduct due diligence to verify the accuracy of outputs. It is recommended that users cross-reference ChatGPT's outputs with other sources and select the most suitable result. This class provides guideline intended to help students use ChatGPT as a tool to support and enhance the learning objectives. The detailed guideline for using AI will be announced in class.

Student use of AI is permitted in this course for certain assignments and activities. **It is not permitted to be used in the following assignments,** as doing so would undermine student learning and achievement of course learning outcomes: **Exams, Quizzes, and Individual Assignments**. Additionally, if and when students use AI in this course, the AI must be cited as is shown within the [NJIT Library AI citation page](#) for AI. If you have any questions or concerns about AI technology use in this class, please reach out to your instructor prior to submitting any assignments.

Tips for Better Grades

Grades are a reflection of the level of understanding of course content. Therefore, to achieve the grade of A or B in this class expect to:

- Participate 100% of the weeks. During each week new content is introduced, explained and then applied for better understanding.
- Turn in all course deliverables in a timely and professional manner.
- Ask any and all questions in Canvas or email instructor.
- Take the bonus assignment! ☺

Additionally, success in the class depends on your discipline and a sound plan.

- Upon the class schedule, you should set your own study plan. The study plan must be practical and reasonable. It's recommended that you incorporate the class schedule into your personal calendar, e.g. the calendar on cellphone, so that you can receive reminders to avoid missing the assignment;

- DON'T want to wait the last minute to submit the coursework, avoiding the unexpected issues happened that cause you can't finish the assignments.

With less preparation and participation expect the grade of C or lower.

Late Policy

Late submissions of assignments, discussions, exams and quizzes will not be accepted. A valid document to prove student's absence must be presented to the instructor by the end of the semester. An "Incomplete" course grade won't be assigned unless the student is hospitalized and unable to complete the rest of the course work.

Classroom Policies

Success in business depends on the combined performance of the professional team, not the self-centered interests of one individual. Similarly, a good learning environment is collectively created and requires the contribution of ALL students within the class. To maximize classroom learning:

- **Engage in learning.** Actively contribute to discussion, exercises, and projects.
- **Show respect.** Be respectful of others' thoughts and ideas.
- **Attendance Policy.** Classroom attendance is required. You will also need to be present in the Canvas classroom each week.
- **Cellphone Policy.** Don't use your cellphone in the classroom, except for class activities.

Email Etiquette

- Put the course name **FIN 430 - XXX** in the subject line.
- Identify the subject of the e-mail with a brief but descriptive summary of the topic: include a proper salutation (e.g. Dr. Wang), and the assignment details such as the title, homework, or test.
- Conclude the e-mail message with a proper closing (e.g. Regards, Sincerely) and your full name.

ACADEMIC POLICIES

Academic Integrity

Academic misconduct will not be tolerated. Academic misconduct includes but is not limited to cheating on assignments or examinations, plagiarizing, and sabotaging another's work.

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. ***Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.*** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

Accommodations for Students with Disabilities

Educational access is the provision of classroom accommodations, auxiliary aids and services to ensure equal educational opportunities for all students regardless of their disability. If you are in need of accommodations due to a disability please contact Scott Janz (oars@njit.edu), Associate Director of the Office of Accessibility Resources & Services (OARS), Kupfrian Hall 201, to discuss your specific needs. A Letter of Accommodation Eligibility from the OARS authorizing your accommodations will be required. Accommodations need to be requested in advance and will not be granted retroactively. Go to the web site <http://www.njit.edu/counseling/services/disabilities.php> for more information. If you wish to have a reasonable accommodation made for you in this class, please discuss the matter with me at the earliest possible time.

EXPECTED CLASS SCHEDULE

Chapter	Description & Assignments	Due Date
	Syllabus Syllabus Quiz	Sunday, 26 Jan
UNIT 1		
1	Lesson 1: Introduction to Derivatives Required Reading, Discussion, Quiz and Week Review	Sunday, 2 Feb
2	Lesson 2: An Introduction to Forwards and Options Required Reading, Discussion, Quiz and Week Review	Sunday, 9 Feb
3	Lesson 3: Insurance, Collars, and Other Strategies Required Reading, Discussion, Individual Assignment, Quiz and Week Review	Sunday, 16 Feb
4	Lesson 4: Introduction to Risk Management Required Reading, Discussion, Week Review and Quiz	Sunday, 23 Feb
UNIT EXAM		
UNIT 2		
5	Lesson 5: Financial Forwards and Futures Required Reading, Discussion, Individual Assignment, Week Review and Quiz	Sunday, 9 March
	AL: Trading Challenge Simulation Starts	Monday, 10 March
6	Lesson 6: Commodity Forwards and Futures Required Reading, Discussion, Week Review and Quiz	Sunday, 16 March
Spring Break (No Classes)		
7	Lesson 7: Interest Rate Forwards and Futures Required Reading, Discussion, Week Review and Quiz	Sunday, 30 March
UNIT EXAM		
UNIT 3		
	Wellness Day	Thursday, 3 April
	AL: Trading Challenge Simulation Ends	Friday, 11 April
	AL: Trading Challenge Discussion	Friday, 11 April
8	Lesson 8: Swaps Required Reading, Discussion, Week Review and Quiz	Sunday, 13 April
UNIT EXAM		
9	Lesson 9: Parity and Other Option Relationships Required Reading, Discussion, Week Review and Quiz	Sunday, 20 April
10	Lesson 10: Binomial Option Pricing Required Reading, Discussion, Individual Assignment, Week Review and Quiz	Sunday, 27 April

UNIT EXAM		
UNIT 4		
	AL: Trading Challenge Report & Reflection Quiz	Friday, 2 May
12	Lesson 11: The Black-Scholes Formula Required Reading and Discussion	Wed, 7 May

Notes:

1. This is a tentative schedule. I reserve the right to adjust if necessary and new version will be announced and posted in Canvas.
2. You are responsible for knowing what is in the latest version of the course calendar.
3. All assignments are due at midnight EST.
4. Jan. 27th: Last day to drop a class.
5. April 7th: Last day to withdraw from a class without a refund.
6. More information about the deadlines:
<https://www.njit.edu/registrar/calendars>

How to join the virtual office hours on Zoom:

Jinghua Wang is inviting you to a scheduled Zoom meeting.

Topic: Jinghua Wang's Personal Meeting Room

Join Zoom Meeting:

<https://njit-edu.zoom.us/j/2544674165?pwd=ODFxRjhFVDdGcmZjNGRIUENFcU51dz09>

Meeting ID: 254 467 4165

Passcode: 621034

One tap mobile

+13052241968,,2544674165#,,,,*621034# US

+13092053325,,2544674165#,,,,*621034# US

Dial by your location

- +1 305 224 1968 US
- +1 309 205 3325 US
- +1 312 626 6799 US (Chicago)
- +1 646 931 3860 US
- +1 929 436 2866 US (New York)
- +1 301 715 8592 US (Washington DC)
- +1 253 205 0468 US
- +1 253 215 8782 US (Tacoma)
- +1 346 248 7799 US (Houston)
- +1 360 209 5623 US
- +1 386 347 5053 US
- +1 507 473 4847 US

- +1 564 217 2000 US
- +1 669 444 9171 US
- +1 669 900 6833 US (San Jose)
- +1 689 278 1000 US
- +1 719 359 4580 US

Meeting ID: 254 467 4165
Passcode: 621034
Find your local number: <https://njit-edu.zoom.us/j/2544674165>

Join by SIP
• 2544674165@zoomcrc.com