
Derivative Securities

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Spring 2024

Instructor: Shweta Srinivasan

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Office Hours: By appointment

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Course Description: This course is an introduction to the basics of derivative securities. The objective of this course is to understand some of these securities (with more focus on futures and options), how they are structured, and how to price them.

Learning Goals: This course will cover the following main topics:

1. Basics of derivative securities: We will define derivative securities and discuss several types of derivatives. We will also talk about the underlying assets for many of these derivatives, and the financial markets for these securities.
2. Futures contracts: We will discuss what futures contracts are and the methodology used to price them. We will also be discussing the various underlying assets futures contracts can be written on.
3. Option contracts: The second part of the semester will focus on options. We will discuss the structure of option contracts, as well as the markets for these contracts. Finally, we will discuss option pricing.
4. Other derivatives: Towards the end of the semester, we will spend some time discussing other derivative contracts, primarily credit derivatives and interest rate swaps.

Course Materials:

1. *Recommended textbook:* Options, Futures, and Other Derivatives by John C. Hull. You do not need to buy the latest edition from the University bookstore; a previous edition purchased online will also work. While I'm not requiring this textbook for this course, I do strongly recommend using it.
2. *Course Website:* The course website on Canvas will be used as an important channel to disseminate course-related information. I will also upload syllabus, slides and other relevant materials on Canvas. It is the students' responsibility to regularly check the site for important information and updates. Please make sure that you have enabled notifications for this course.
3. *Other materials and readings:* Concurrent to our discussions, I will also be posting additional reading materials on Canvas.

Homework Assignments: Homework will be assigned almost every week and will be due a week from the date of assignment. All homework will be assigned through Canvas. Please plan your time well to ensure your submissions are on time.

Exams: There are two midterms and a final exam for this course. Each midterm is worth 15% of your final grade, as is the final exam. The final exam will be an in-class open-notes test and will be cumulative.

Attendance and Class participation: It is expected that you attend classes regularly, arrive on time, and make meaningful contributions to classroom discussions. Missing too many classes will interfere with you meaningfully participating in class discussions, and as such will reflect in your final grade. This course deals with several complex topics and attending classes and participating regularly is important for you to get the most out of this course. Therefore, class participation will account for 20% of your final grade.

Makeup exam/homework policy: *There will be no makeup exams or makeup assignments for unexcused absences.* Any unexcused absence on an exam day will result in a score of zero for that exam. If you are going to be absent/unavailable on the day a homework assignment is due, you are responsible for finishing and submitting it on or before the due date. You must provide at least a week's notice if you need to miss an exam for a University-approved reason and need an alternate date. I will try to accommodate last-minute excused absences on exam or quiz days as best as I can. *To qualify for extensions on exams and assignments, you must provide valid documentation like a doctor's note, police report, or airplane ticket etc. prior to the absence.*

Grade Determination: Your grade in this class will be determined as follows:

Midterm Exams.....	30%
Final Exam.....	15%
Homework.....	35%
Class participation.....	20%

Letter grades will be assigned as follows:

90 – 100%	A
85 – 89%	B+
80 – 84%	B
75 – 79%	C+
70 – 74%	C
60 – 69%	D
Less than 60%	F

Academic integrity:

The Academic Integrity policy can be found at <http://studentconduct.rutgers.edu/student-conduct-processes/academic-integrity/>

Students are responsible for understanding the principles of academic integrity and abiding by them in all aspects of their work at the University. Students are also encouraged to help educate fellow students about academic integrity and to bring all alleged violations of academic integrity they encounter to the attention of the appropriate authorities.

Academic Integrity means that you (the student) must:

- Properly acknowledge and cite all use of the ideas, results, or words of others,
- Properly acknowledge all contributors to a given piece of work,
- Make sure that all work submitted as your own in a course activity is your own and not from someone else
- Obtain all data or results by ethical means and report them accurately
- Treat all other students fairly with no encouragement of academic dishonesty

Adherence to these principles is necessary in order to ensure that:

- Everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments
- All student work is fairly evaluated, and no student has an inappropriate advantage over others
- The academic and ethical development of all students is fostered
- The reputation of the University for integrity is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld. Violations are taken seriously and will be handled according to University policy.

Student Resources:

Refer to this site for resources to assist you in preventing academic integrity issues. Such as coaching from the Learning Resource Center, Tips to help prevent AI violations, and other reference material for writing.

<https://deanofstudents.camden.rutgers.edu/academic-resources>

Student Code of Conduct:

Rutgers University-Camden seeks a community that is free from violence, threats, and intimidation; is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and does not threaten the physical or mental health or safety of members of the University community, including in classroom space.

As a student at the University, you are expected adhere to the Code of Student Conduct.

To review the code, go to: <https://deanofstudents.camden.rutgers.edu/student-conduct>.

Note that the conduct code specifically addresses disruptive classroom conduct, which means "Engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Disability Services/Accommodations:

The University is committed to supporting the learning of all students and faculty will provide accommodations as indicated in a Letter of Accommodation issued by the Office of Disability Services (ODS). If you have already registered with ODS and have your letter of accommodations, please share this with me early in the course. If you have or think you have a disability (learning, sensory, physical, chronic health, mental health or attentional), please contact

<https://success.camden.rutgers.edu/disability-services>.

Accommodations will be provided only for students with a letter of accommodation from ODS. Their services are free and confidential. Letters only provide information about the accommodation, not about the disability or diagnosis.

Tentative Course Schedule*:

Date	Topic	Exams
01/16	Intro to derivatives (Ch 1)	
01/18	Mechanics of futures markets (Ch 2)	
01/23	Hedging strategies using futures (Ch 3)	
01/25	Financial forwards and futures (Ch 5)	
01/30	Financial forwards and futures (Ch 5)	
02/01	Commodity forwards and futures (Ch 5)	
02/06	Interest rate forwards and futures (Ch 6)	
02/08	Interest rate forwards and futures (Ch 6)	
02/13	Midterm 1 Review	
02/15		Midterm 1
02/20	Mechanics of options markets (Ch 10)	
02/22	Mechanics of options markets (Ch 10)	
02/27	Properties of stock options (Ch 11)	
02/29	Trading strategies involving options (Ch 12)	
03/05	Binomial option pricing (Ch 13)	
03/07	Binomial option pricing (Ch 13)	
03/12	<i>Spring recess – no class</i>	
03/14	<i>Spring recess – no class</i>	
03/19	Black-Scholes-Merton model (Ch 15)	
03/21	Black-Scholes-Merton model (Ch 15)	
03/26	Black-Scholes-Merton model (Ch 15)	
03/28	Midterm 2 Review	
04/02		Midterm 2
04/04	Options on stock indices and currencies (Ch 17)	
04/09	The Greek letters (Ch 19)	
04/11	Exotic options (Ch 26)	
04/16	Credit derivatives (Ch 25)	
04/18	Swaps (Ch 7)	
04/23	Other topics in derivatives	
04/25	Other topics in derivatives	
TBD		Final Exam

This course schedule is tentative. If I need to make changes to this schedule, you will be notified through Canvas. However, **exam dates are highly unlikely to change; please plan accordingly.*