

MATH 432H: Honors - Mathematics of Financial Derivatives I (Capstone I) *Course Syllabus*

NJIT Academic Integrity Code: All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: Mathematical analysis of models encountered in the area of financial derivatives. Topics include modeling and analysis of futures markets, determination of future prices, hedging strategies, swaps, option markets, stock options and their trading strategies. Effective From: Fall 2007.

Number of Credits: 3

Prerequisites: Math 112 and Math 346 with a grade of C or better.

Course-Section and Instructors

Course-Section	Instructor
Math 432-H01	Professor K. Rappaport

Required Textbook:

Title	Derivatives Markets
Author	McDonald
Edition	3rd
Publisher	Addison Wesley
ISBN #	978-0321543080
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University-wide Withdrawal Date: Please note that the last day to withdraw with a W is **November 3, 2014**. It will be strictly enforced.

POLICIES

DMS Course Policies: All DMS students must familiarize themselves with, and adhere to, the **Department of Mathematical Sciences Course Policies**, in addition to official **university-wide policies**. DMS takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Homework and Quizzes	15%
Project	15%
Midterm Exam	40%
Final Exam	30%

Your final letter grade will be based on the following tentative curve. NOTE: ---

A	90 - 100	C	65 - 75
B+	86 - 89	D	55 - 64
B	80 - 85	F	0 - 54
C+	76 - 79		

Attendance Policy: Attendance at all classes will be recorded and is mandatory. Please make sure you read and fully understand the **Math Department's Attendance Policy**. This policy will be strictly enforced.

Homework: Integrity – Your work is expected to be your own. Help from tutors, classmates etc is encouraged but you are responsible for mastering the material. Homework will be assigned at all classes. Homework will be collected and periodic quizzes will be given. Late homework will not receive full credit. There will be no makeup tests, quizzes, or homework.

Exams: There will be two midterm exams held in class during the semester and one comprehensive final exam. The final exam will be held during the following week:

Final Exam Week	December 15 - 19, 2014
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The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the **Math Department's Examination Policy**. This policy will be strictly enforced.

Makeup Exam Policy: There will be **NO MAKE-UP EXAMS** during the semester. In the event the Final Exam is

not taken, under rare circumstances where the student has a legitimate reason for missing the final exam, a makeup exam will be administered by the math department. In any case the student must notify the Math Department Office and the Instructor that the exam will be missed and present written verifiable proof of the reason for missing the exam, e.g., a doctors note, police report, court notice, etc., clearly stating the date AND time of the mitigating problem.

ADDITIONAL RESOURCES

Further Assistance: For further questions, students should contact their instructor. All instructors have regular office hours during the week. These office hours are listed at the Math Department link. Teaching Assistants are also available in the [Math Learning Center](#).

All students must familiarize themselves with and adhere to the Department of Mathematical Sciences Course Policies, in addition to official university-wide policies. The Department of Mathematical Sciences takes these policies very seriously and enforces them strictly.

Important Dates (See: [Fall 2014 Academic Calendar](#), [Registrar](#))

Date	Day	Event
September 2, 2014	T	First Day of Classes
September 8, 2014	M	End of Add/Drop Period
November 3, 2014	M	Last Day to Withdraw
November 25, 2014	T	Thursday Classes Meet
November 26, 2014	W	Friday Classes Meet
November 27 - 30, 2014	R - S	Thanksgiving Recess Starts
December 10, 2014	W	Last Day of Classes
December 11 & 12, 2014	R & F	Reading Days
December 15 - 20, 2014	M - S	Final Exam Period

Course Outline

Lecture	Section	Topic	Assignment
1	Chapter 1	Introduction	1 - 8
2	Chapter 2	Forwards & Options	1, 4a - c, 5b, b, 6 - 8
3	Chapter 2	Forwards & Options	
4	Chapter 2	Forwards & Options	13, 14, 16

5	Chapter 2	Forwards & Options	
6	Chapter 2	Forwards & Options	
7	Chapter 3	Collars & Other Strategies	1 - 5
8	Chapter 9	Parity	1, 2, 3b
9		EXAM	
10	Chapter 3	Collars & Other Strategies	6 - 8
11	Chapter 3	Collars & Other Strategies	9.1
12	Chapter 3	Collars & Other Strategies	11, 12
13	Chapter 3	Collars & Other Strategies	13 - 15, 18, 20
14	Chapter 4	Intro to Risk Management	1 - 3
15	Chapter 4	Intro to Risk Management	4 - 6
16	Chapter 4	Intro to Risk Management	7 - 9
17	Chapter 4	Intro to Risk Management	10 - 12
18	Chapter 4	Intro to Risk Management	15 - 17
19		EXAM	
20	Chapter 5	Forwards & Futures	1 - 3
21	Chapter 5	Forwards & Futures	4 - 6
22	Chapter 5	Forwards & Futures	7, 8, 10
23	Chapter 5	Forwards & Futures	11, 12, 13
24	Chapter 5	Forwards & Futures	14, 16
25	Chapter 8	Swaps	2 - 5
26	Chapter 8	Swaps	8 - 10
27	Chapter 8	Swaps	13, 14
28	Chapter 8	Swaps	
