

## **MATH 347-002: Mathematics of Finance II** *Spring 2020 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:** This course introduces mathematical models of bond and stock prices, which lead to arbitrage pricing of options and other derivative securities, and portfolio management. These areas of mathematical finance have a great impact on the way financial markets function. Topics include risk-free, and risky assets, portfolio management, futures, and options. Effective From: Fall 2010.

**Number of Credits:** 3

**Prerequisites:** Math 346 and Math 244 or Math 333 all with a grade of C or better.

**Course-Section and Instructors**

Course-Section	Instructor
Math 347-002	Professor K. Rappaport

**Office Hours for All Math Instructors:** [Spring 2020 Office Hours and Emails](#)

**Required Textbook:**

<b>Title</b>	<i>The Theory of Interest</i>
<b>Author</b>	Kellison
<b>Edition</b>	3rd
<b>Publisher</b>	Irwin
<b>ISBN #</b>	978-0073382449

**University-wide Withdrawal Date:** The last day to withdraw with a W is **Monday, April 6, 2020**. 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	20%
Midterm Exam I	20%
Midterm Exam II	20%
Final Exam	40%

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

A	90 - 100	C	65 - 74
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 Policy:** Assigned homework will be collected.

**Quiz Policy:** There will be announced quizzes periodically.

**Exams:** There will be two midterm exams held in class during the semester and one comprehensive final exam. Exams are held on the following days:

Midterm Exam I	Lecture 10
Midterm Exam II	Lecture 19
Final Exam Period	May 8 - 14, 2020

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 QUIZZES OR EXAMS** during the semester. In the event an exam is not taken under rare circumstances where the student has a legitimate reason for missing the exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the Math Department Office/Instructor that the exam will be missed.

**Cellular Phones:** All cellular phones and other electronic devices must be switched off during all class times.

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## ADDITIONAL RESOURCES

**Math Tutoring Center:** Located in the Central King Building, Lower Level, Rm. G11 (See: **Spring 2020 Hours**)

**Further Assistance:** For further questions, students should contact their instructor. All instructors have regular office hours during the week. These office hours are listed on the Math Department's webpage for **Instructor Office Hours and Emails**.

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.

**Accommodation of Disabilities:** Disability Support Services (DSS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director of Disability Support Services at [973-596-5417](tel:973-596-5417) or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Disability Support Services office authorizing your accommodations will be required.

For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Disability Support Services (DSS) website at:

- <https://www.njit.edu/studentsuccess/accessibility/>

**Important Dates** (See: [Spring 2020 Academic Calendar](#), [Registrar](#))

Date	Day	Event
January 21, 2020	T	First Day of Classes
January 31, 2020	F	Last Day to Add/Drop Classes
March 15 - 22, 2020	Su-Su	Spring Recess: No Classes/ University Open
April 6, 2020	M	Last Day to Withdraw
April 10, 2020	F	Good Friday - University Closed
May 5, 2020	T	Friday Classes Meet - Last Day of Classes
May 6 & 7, 2020	W & R	Reading Days
May 8 - 14, 2020	F - R	Final Exam Period

## Course Outline

Lecture	Section	Topic
1	4.1 -4.2	General Annuities
2	4.3 - 4.6	General Annuities
3	4.3 - 4.6	General Annuities
4	4.7 -4.8	General Annuities
5	4.7 -4.8	General Annuities
6	Chap 5	Cash Flow
7	Chap 5	Cash Flow
8	Chap 5	Yield Rates
9	Chap 5	Yield Rates
10		<b>EXAM</b>
11	Chap 5	Yield Rates
12	Chap 5	Portfolio Methods
13	Chap 5	Portfolio Methods

14	Chap 6	Amortization Schedules
15	Chap 6	Amortization Schedules
16		Spring Recess
17		Spring Recess
18	Chap 6	Sinking Funds
19		<b>EXAM</b>
20	Chap 6	Sinking Funds
21	Chap 6	Sinking Funds
22	Chap 6	Varying Payments
23	Chap 7	Bonds
24	Chap 7	Bonds
25		No Class
26	Chap 7	Bonds
27	Chap 7	Bonds
28	Chap 7	Bonds
29	Chap 7	Bonds
30	Chap 7	Other Securities
31		<b>REVIEW</b>

*Updated by Professor K. Rappaport - 1/20/2020  
Department of Mathematical Sciences Course Syllabus, Spring 2020*

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