NJIT New Jersey's Science & Technology University

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 441: Actuarial Mathematics I
Fall 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: Topics include the economics of insurance, individual risk models for a short term, survival distributions and life tables, life insurance per year, life annuities, and net premiums.

Number of Credits: 3

Prerequisites: MATH 346 with a grade of C or better.

Course-Section and Instructors

Course-Section	Instructor
Math 441-001	Professor K. Rappaport

Office Hours for All Math Instructors: Fall 2020 Office Hours and Emails

Required Textbook:

Title	*Actuarial Mathematics for Life Contingent Risks*
Author	Dickson and Waters
Edition	2nd
Publisher	Cambridge University Press
ISBN #	978-1107044074

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 9, 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	15%
Projects 1, 2, 6	30%
Project 3	18%
Project 4, 5	10%
Fomula Sheet	2%
Final Exam	25%

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

A	90 - 100	**C**	65 - 76
B+	87 - 89	**D**	55 - 64
B	80 - 86	**F**	0 - 54
C+	77 - 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: 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 periodically and periodic quizzes will be given. Late homework will not receive full credit. There will be no makeup tests, quizzes, or homework.

Projects: There will be 6 projects. Projects

- 1, 2, 6 are chapter problems.
- Project 3 is a research project on Social Security.
- Projects 4, 5 are discussions of recent research on Social Security.

Exams: Exams will be proctored by using both Respondus LockDown Browser+Monitor and Webex. Students will be required to join a Webex meeting from their phone with their cameras on, and to access the exam through LockDown Browser on a Mac or Windows PC with webcam. Students must follow all instructions related to environment checks and camera positioning.After the exam is submitted the student will log out of Respondus and will then be required to submit their work upload within 15 minutes of submitting their exam.

There will be two one comprehensive final exam. The final exam will be held during the following week:

Final Exam Period	December 15 - 21, 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.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: Fall 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 or via email at 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: Fall 2020 Academic Calendar, Registrar)

Date	Day	Event
September 1, 2020	T	First Day of Classes
September 5, 2020	S	Saturday Classes Begin
September 7, 2020	M	Labor Day
September 8, 2020	T	Monday Classes Meet
September 8, 2020	T	Last Day to Add/Drop Classes
November 9, 2020	M	Last Day to Withdraw
November 25, 2020	W	Friday Classes Meet
November 26-29, 2020	R - Su	Thanksgiving Recess - University Closed
December 10, 2020	R	Last Day of Classes
December 11 & 14, 2020	F & M	Reading Days
December 15 - 21, 2020	T - M	Final Exam Period

Course Outline

Lecture	Sections	Topic	Assignment
1	Chapter 1	Introduction	P 16
2	Chapter 1	Introduction	P 16
3	Chapter 2	Survival Distributions	P 36 - 39

4	Chapter 2	Survival Distributions	P 36 - 39
5	Chapter 2	Survival Distributions	P 36 - 39
6	Chapter 2	Survival Distributions	P 36 - 39
7	Chapter 3	Life Tables	P 67 - 71
8	Chapter 3	Life Tables	P 67 - 71
9	Chapter 3	Life Tables	
10	Chapter 3	Life Tables	P 67 - 71
11	Chapter 3	Life Tables	P 67 - 71
12	Chapter 4	Life Insurance	P 102- 106
13	Chapter 4	Life Insurance	P 102- 106
14	Chapter 4	Life Insurance	P 102- 106
15	Chapter 4	Life Insurance	P 102- 106
16	Chapter 4	Life Insurance	P 102- 106
17	Chapter 4	Life Insurance	P 102- 106
18	Chapter 4	Life Insurance	P 102- 106
19	Chapter 4	Life Tables	
20	Chapter 4	Life Insurance	P 102- 106
21	Chapter 5	Life Annuities	P 138 - 141
22	Chapter 5	Life Annuities	P 138 - 141
23	Chapter 5	Life Annuities	P 138 - 141
24	Chapter 5	Life Annuities	P 138 - 141
25	Chapter 5	Life Annuities	P 138 - 141
26	Chapter 5	Life Annuities	P 138 - 141
27	Chapter 5	Life Annuities	P 138 - 141
28	Chapter 5	Life Annuities	P 138 - 141
		FINAL EXAM	