MATH 442: Actuarial Mathematics II
Spring 2025 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 net premium reserves, insurance models including expenses, nonforfeiture benefits, and dividends.

Number of Credits: 3

Prerequisites: MATH 441 with a grade of C or better

Course-Section and Instructors:

Course-Section	Instructor
Math 442	Professor T. Bui

Office Hours for All Math Instructors: Spring 2025 Office Hours and Emails

Required Textbook:

Title	*Actuarial Mathematics for Life-Contingent Risks*
Author	Dickson, Hardy, and Waters
Edition	3rd
Publisher	Cambridge University
ISBN #	ISBN-13: 9781108478083 DIGITAL ISBN-13: 9781108787406

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 7, 2025**. 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%
Quizzes, and In-class Assignments	20%
Midterm Exam	30%
Final Exam	35%

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

A	90 - 100	**C**	65 - 75
B+	86 - 89	**D**	50 - 64
B	80 - 85	**F**	0 - 49
C+	76 - 79		

Attendance Policy: Attendance at and participation in all lectures is expected. Tardiness or leaving class early is disruptive to the classroom environment and should be avoided. If you know in advance that you will be absent from class for a legitimate reason, please tell me prior to your absence so that appropriate arrangements (if any) can be made. Attendance is recorded but does not count toward your final grade. Please make sure you read and fully understand the Math Department's Attendance Policy. This policy will be strictly enforced.

Attendance and participation are used for consideration in case your grades are on the borderline.

Religious Observance: NJIT is committed to supporting students observing religious holidays. Students must notify their instructors in writing of any conflicts between course requirements and religious observances, ideally by the end of the second week of classes and no later than two weeks before the anticipated absence.

Homework: Homework will be assigned weekly and due at 11:59 pm on Sunday. Help from tutors, classmates, the internet, etc is encouraged but you are responsible for mastering the material. You should turn in the homework **on time** to keep up with the course progress. Homework will be graded based on your progress on all the questions. You do not need correct answers but at least attempt to work on problems. Homework submitted *late than **3 days** from the due date **will not be accepted***.

Quizzes: From time to time, quizzes may be given. Make-up quizzes are NOT given.

In-class assignments: In-class assignments will be assigned periodically. You will be asked to jot down some ideas or write down related formulas or definitions to a problem in class, and submit the whole assignment with corrected answers by the end of the day.

By the end of the semester, I will drop the lowest scores in Homework and two in Quizzes/In-class assignments

category.

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

Midterm Exam	March 27, 2025
Final Exam Period	May 10 - May 16, 2025

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: Spring 2025 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.
AI usage: The usage of artificial intelligence (AI) is permitted in this course and no citation is necessary. If you have any questions or concerns about AI technology use in this class, please contact your instructor before submitting any assignments.

Accommodation of Disabilities: The Office of Accessibility Resources and Services (OARS) 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 Scott Janz, Associate Director of Disability Support Services at 973-596-5417 or via email at scott.p.janz@njit.edu. The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Office of Accessibility Resources and 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 Office of Accessibility Resources and Services (OARS) website at:

https://www.njit.edu/accessibility/

Important Dates (See: Spring 2025 Academic Calendar, Registrar)

Date	Day	Event
January 21, 2025	Tuesday	First Day of Classes
January 27, 2025	Monday	Last Day to Add/Drop Classes

March 16, 2025	Sunday	Spring Recess Begins
March 22, 2025	Saturday	Spring Recess Ends
April 3, 2025	Thursday	Wellness day
April 7, 2025	Monday	Last Day to Withdraw
April 18, 2025	Friday	Good Friday - No Classes
April 20, 2025	Sunday	Easter Sunday - No Classes Scheduled
May 6, 2025	Tuesday	Thursday Classes Meet
May 7, 2025	Wednesday	Friday Classes Meet
May 7, 2025	Wednesday	Last Day of Classes
May 8, 2025	Thursday	Reading Day 1
May 9, 2025	Friday	Reading Day 2
May 10 - May 16, 2025	Friday to Thursday	Final Exam Period

Course Outline

This course will cover chapters 7 (sections 1-4 (except 2.5), 7,8), 8, 9, 10, 11 (except section 12)

Lecture #	Section #	Topic
1 & 2	Chapters 1 - 6	*Review - In-class Assignment 1*
3	Chapter 7	*Policy Values*
4	Chapter 7	*Policy Values - Quiz 1 for chapters 1-6*
5	Chapter 7	*Policy Values*
6	Chapter 7	*Policy Values - In-class Assignment 2*
7	Chapter 7	*Policy Values*
8	Chapter 8	*Multiple States - Quiz 2 for Chapter 7*
9	Chapter 8	*Multiple States*

10	Chapter 8	*Multiple States - In-class Assignment 3*
11	Chapter 8	*Multiple States*
12	Chapter 9	*Multi-decrement models - Quiz 3 for Chapter 8*
13	Chapter 9	*Multi decrement models*
14	Chapter 9	*Multi-decrement models - In-class Assignment 4*
15	Chapter 10	*Joint life and last survivor benefits*
16 & 17	Exam Review and In-class Assignment 5	
18	Midterm Exam (covers chapters 7-9)	
19	Chapter 10	*Joint life and last survivor benefits*
20	Chapter 10	*Joint life and last survivor benefits - In-class Assignment 6*
21	Chapter 11	*Pension Mathematics*
22	Chapter 11	*Pension Mathematics - Quiz 4 for Chapter 10*
23	Chapter 11	*Pension Mathematics*
24	Chapter 11	*Pension Mathematics - In-class Assignment 7*
25	Chapter 11	*Pension Mathematics*
26	Chapter 11	*Pension Mathematics*
27 & 28	Exam Review and In-class Assignment 8	