

MATH 1100-R07
Finite Mathematics
Fall 2022

CLASS SCHEDULE: Tue, Fri 10-11:15am

LOCATION: FMH 312

INSTRUCTOR: John Adamski, PhD

EMAIL ADDRESS: adamski@fordham.edu

OFFICE HOURS: Tue 11:30-1:30, Thu 1:30-3:30

OFFICE: JMH 418

WEBSITE: <https://johnadamski.com>

OFFICE PHONE: 718-817-0427

Course description. This course introduces you to various topics that demonstrate fundamental mathematical ideas and concepts needed to analyze real-world problems. Topics include sets, basic concepts of probability, conditional probability, Bayes's Theorem, counting principles, normal distributions, and basic concepts of mathematical finance. We will encounter three different types of mathematical thinking: deductive mathematical logic, probabilistic reasoning, and mathematical modeling. Upon successful completion of this course, you should be able to set up basic mathematical models and solve them using appropriate tools in the context of real-world problems.

This course satisfies the Mathematical and Computational Reasoning requirement in Fordham's Core Curriculum.

Course Content.

- (Chapter 7) Sets and Probability

Sets: union, intersection, complement. Applications of Venn diagrams. Basic rules of probability. Conditional probability. Independent Events. Bayes' theorem.

- (Chapter 8) Counting principles and random variables

The multiplication principle, combinations, permutations. Probability applications of counting principles. Binomial probability. Random variables.

- (Chapter 9) Statistics

Mean, standard deviation and median of a data set. The normal distribution: how to compute areas under the bell curve using z-scores.

- (Chapter 5) Mathematical Finance

Simple and compound interests. Continuous compounding. Future value of an annuity. Present value of an annuity; amortization.

Textbook. *Finite Mathematics*, 12th Edition, by Lial, Greenwell, Ritchey.

- You are NOT required to purchase a physical copy of the textbook.
- You must purchase access to MyLab Math with Ebook either at the University Bookstore or directly via the following website: <https://www.pearsonmylabandmastering.com/northamerica/index.html>
- At the URL above, click on "Student" under "Register" and enter the following instructor's course ID: **adamski22968**
- Be sure to use your Fordham email address to create your MyLab Math account. If you use a preferred name different from the one registered with the University, let the instructor know so that your grade will be properly recorded.

Communication Notes, handouts, written homework, and solutions will be posted to <https://johnadamski.com>. Online homework and scores can be found in MyLab Math. All other grades will be posted to Blackboard.

Course Grade. Your numerical grade will be computed as a weighted average.

Online HW, H_O	15%
Written HW, H_W	15%
Midterms, M_1 and M_2	20% each
Final, F	30%

That is

$$\text{Grade} = .15H_O + .15H_W + .2M_1 + .2M_2 + .3F$$

Grades will be assigned according to the following table.

A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D	60-69%
F	< 60%

The instructor reserves the right to adjust this scale, but you are guaranteed at least the grade assigned by this chart.

Time commitment It is recommended that you dedicate between 2 and 3 hours outside of the classroom for every credit you registered. Since our class is a three-credit course, you should be spending between 6 and 9 hours, per week, preparing and reviewing for this course. These numbers are averages, of course. Some weeks you may spend less time, while other weeks you may spend more time.

Attendance policy. Students may be dropped after 3 absences. Regular attendance is essential for the successful completion of this course. Absence is not an excuse for coming to class unprepared.

Exams. There are two in-class midterms and a cumulative final exam, which are tentatively scheduled as follows.

- Exam 1: Friday October 7th, full class
- Exam 2: Tuesday November 15th, full class
- Final Exam: Friday December 16th, 9:30-11:30am

Make-up tests will only be permitted for excused absences. In order to qualify for a make-up test, the student must contact the instructor within 24 hours of the absence by phone or email and be prepared to follow the college's policy on excused absences.

Textbooks or notes are *not* permitted. A formula sheet will be provided *only with the math for finance formulas*.

Homework. There are two types of homework.

1. Online homework (weekly): this will be on MyMathLab.
2. Written homework. Every 2-3 weeks I will distribute a PDF with a handful of problems. You will have one week to work on the problems and then I will collect your hand-written solutions in class. Please do not email me your homework.

Late homework will only be accepted with the permission of your instructor.

Calculators. Calculators or other electronic devices are permitted and sometimes necessary for homework problems. You are allowed to use a **TI 30X IIS** scientific calculator on exams. *No other calculators will be permitted on exams.* Cell phones, tablets, and computers will not be permitted on exams.

Academic Integrity. By being enrolled at Fordham University, students are bound to comply with the University Code of Conduct, which includes, but is not limited to the Standards of Academic Integrity found at

http://www.fordham.edu/info/25380/undergraduate_academic_integrity_policy

All portions of the academic integrity policy will apply to this class. Your work on every evaluation must be your own. Cheating on a homework assignment or quiz will result in a grade of zero on that homework assignment or quiz. Cheating on a test will result in an F in the course.

Disabilities. Under the Americans with Disabilities Act, all members of the campus community are entitled to equal access to the programs and activities of Fordham University. If you have (or think that you might have) a disability that may impact your participation in the activities, coursework, or assessment of this course, you may be entitled to accommodations through the Office of Disability Services. You can contact them at disabilityservices@fordham.edu, 718-817-0655, or by visiting the lower level of O'Hare Hall (Rose Hill campus) or Lowenstein 408 (Lincoln Center campus).

Whether or not you have documentation for accommodations, your success in this class is important to me. If there are aspects of the course that are not accessible to you, please let me know as soon as possible so that we can work together to develop strategies to meet both your needs and the requirements of the course.

Help and Tutoring. Help is available!

- You can come to my office hours or make an appointment to meet with me at another time.
- You can go to the Math Help Room (JMH 410 at Rose Hill; QuinnX at Lincoln Center) whenever it is open. The schedule is posted online. It is free, and you don't need an appointment.
- FCRH and FCLC students may make tutoring appointments through Knack.
- MyLab Math contains many helpful resources, too.

Important Dates.

- Wednesday, August 31: first day of classes.
- Monday, September 5: Labor Day, no classes.
- Wednesday, September 7: Classes follow a Monday schedule.
- Monday, October 10: Columbus Day, no classes.
- November 23-27: Thanksgiving recess, no classes.
- Friday, December 9: last day of classes.

Schedule.

Class	Date	Topic
1	F 9/2	7.1: Sets
2	Tu 9/6	7.2: Applications of Venn Diagrams, I
3	F 9/9	7.2: Applications of Venn Diagrams, II
4	Tu 9/13	7.3: Introduction to Probability
5	F 9/16	7.4: Basic Concepts of Probability, I
6	Tu 9/20	7.4: Basic Concepts of Probability, II
7	F 9/23	7.5: Conditional Probability; Independent Events, I
8	Tu 9/27	7.5: Conditional Probability; Independent Events, II
9	F 9/30	7.6: Bayes' Theorem
10	Tu 10/4	Review
11	F 10/7	Exam 1 (7.1-6)
12	Tu 10/11	8.1: The multiplication Principle; Permutations
13	F 10/14	8.2: Combinations
14	Tu 10/18	8.3: Probability Applications of Counting Principles
15	F 10/21	8.4: Binomial probability
16	Tu 10/25	8.5: Probability Distributions; Expected Value
17	F 10/28	Review
18	Tu 11/1	9.1, 9.2: Mean, Median, Standard Deviation
19	F 11/4	9.3: Normal Distribution, I
20	Tu 11/8	9.3: Normal Distribution, II
21	F 11/11	Review
22	Tu 11/15	Exam 2 (8.1-5, 9.1-9.3)
23	F 11/18	5.1: Simple and Compound
24	Tu 11/22	5.2: Future Value of an Annuity
25	Tu 11/29	5.3: Present Value of an Annuity; Amortization
26	F 12/2	Review
27	Tu 12/6	Review
28	F 12/9	Review
	F 12/16	Final Exam (all sections listed above)

Disclaimer The course syllabus is a general plan for the course. The instructor may deviate from the syllabus, but all such deviations will be announced in class and posted to the course webpage.