Course Syllabus   MATH 231: Linear Algebra I

Instructor	Nicholas Vlamis	**Office**	507 Kiely Hall
E-mail	nicholas.vlamis@qc.cuny.edu	**Office Hour**	M 12–1pm & W 11am–12pm
Class	MW 3:45–5:35pm, 320 Kiely Hall	**Website**	231f23.nickvlamis.com

Course Description

Formally, linear algebra is the study of linear maps between vector spaces. As a first course in linear algebra, this course focuses largely on the structure of finite-dimensional real spaces. For instance, the plane you use to graph functions of the real numbers is the 2-dimensional real space, and the world as you experience it is (approximately) the 3-dimensional real space. In this setting, the study of linear maps can be reduced to studying matrices, which are concrete objects for us to work with. Towards the end of the course, we will touch on some of the abstract aspects of linear algebra and discuss abstract vector spaces. The course begins by studying systems of linear equations, which will motivate the introduction and study of matrices. Real world examples highlighting the importance of linear algebra will be sprinkled throughout the semester.

From the course textbook, we will plan to cover the following sections (but not necessarily in order): Chapter 1 (except for Sections 1.6 and 1.10), Sections 2.1, 2.2, 2.3, 2.8, 2.9, 3.1, 3.2, 5.1, 5.2, 5.3, 5.9, 6.1, 6.2, 6.3, 6.4, 10.1, 10.2. We will end the semester by giving a tour of abstract vector spaces and discuss various topics from Chapter 4.

Prerequisites

The official prerequisite is one semester of calculus. However, we may use examples that require knowledge of integrals.

Course Textbook

David C. Lay, Steven R. Lay, and Judi J. McDonald. *Linear Algebra and Its Applications, sixth edition.* Pearson, 2021.

Course Website

With the exception of grades, all course content will be accessed via our course website: https://231f23.nickvlamis.com. Grades will be posted on Blackboard.

Assessment

Your course grade will be determined from the following categories and weights:

Homework & Quizzes	25%
Exams	75%

There will be a weekly quiz, usually given on Wednesdays, that will be based on the assigned homework. Homework will be collected with the quizzes and graded for completion. Your lowest quiz grade will be dropped.

There will be three exams of equal weight, so each is worth 25% of your grade. The final exam will be cumulative.

Exam 1	Wednesday, October 4	In Class
Exam 2	Wednesday, November 8	In Class
Final Exam	Wednesday, December 18	4–6pm

Office Hours

My office hour will be held in my office in Kiely Hall. This time will be student driven, so please come with questions—you can ask me anything you like. You may also make an appointment to meet with me at a time outside of office hours if necessary. Individual in-person meetings can be made by appointment if necessary and held in my office, 507 Kiely Hall.

The office hour on Monday is during free hour, and so I may have to change the time of this office hour whenever I have a meeting scheduled.

Student Concerns

Any student with a disability or other special circumstances should make an appointment and discuss this with me. Students with disabilities needing academic accommodation should register with and provide documentation to the Office of Special Services. You can reach them by phone at 718-997-5870 (you may need to leave a voicemail) or via the internet at https://www.qc.cuny.edu/sp/. The Office of Special Services will provide a letter for you to give to me indicating the need for accommodation and the nature of it. This should be done during the first week of class. For more information about services available to Queens College students, contact the Office of Special Services.

MQR Outcomes

This course satisfies the MQR designation for the Pathways General Education Program at Queens College. As such, the course satisfies the following learning outcomes:

- MQR 1: Interpret and draw appropriate inferences from quantitative representations, such as formulas, graphs, or tables.
- MQR 2: Use algebraic, numerical, graphical, or statistical methods to draw accurate conclusions and solve mathematical problems.
- MQR 3: Represent quantitative problems expressed in natural language in a suitable mathematical format.
- MQR 4: Effectively communicate quantitative analysis or solutions to mathematical problems in written or oral form.
- MQR 5: Evaluate solutions to problems for reasonableness using a variety of means, including informed estimation.
- MQR 6: Apply mathematical methods to problems in other fields of study.