Objectives

Linear algebra is a cornerstone in any mathematics curriculum for two important reasons:

1) Because the theory of linear algebra is well understood, a first step in many areas of applied mathematics is to reduce the problem into one of linear algebra.

2) Vector spaces and linear operators studied in linear algebra are found in many different areas of mathematics, science and engineering.

Students will leave the course with a computational ability and conceptual understanding of solving linear equations, vector spaces and subspaces, orthogonality, determinants, eigenvalues and eigenvectors, linear transformations, and matrix factorizations (such as LU, QR, and SVD).

Course Communication

The syllabus, calendar, notes, worksheets, homework problem sets, solutions and any updates/announcements for this course will be communicated in class, by email and/or posted to NYU Classes.

Coursework

Lectures

Lectures will be mainly explained on the blackboard. Students are encouraged to read the assigned sections of the text before class and review class notes and examples soon after class.

Participation

Questions and discussion during class are encouraged. Students may participate by answering/asking questions during class, presenting solutions on the board, leading group work, forming study groups, etc.

Quizzes

Each Thursday, a 10-15 min quiz will be given at the end of the lecture. The questions will be basic lecture questions/easy exercises/homework like exercises about the topics covered the week before. The lowest two quiz grades will be dropped. There are no make-up quizzes (a missed quiz receives a "0"). The policy for missed quizzes is the same as for missed exams, see below.

Homework

Homework problem sets designed to expand and solidify concepts discussed in class will be posted to NYU Classes one week in advance of the due date. Homework write-ups are due on Tuesdays, unless otherwise announced. The lowest homework grade will be dropped.

While students are encouraged to form study groups and work together on homework outside of class time, homework write-ups must be written individually. It is advised that students begin assignments soon after topics are covered in lecture. Due dates are chosen to help students review the material discussed in a timely manner. In fairness to graders and other students in the course, late homework will
not be accepted, it will result in a "0". For missed homework, only major issues are valid reasons, and the policy is the same as for the exams, see below.

Exams
Calculators will not be permitted on exams.

- There will be two mid-semester exams, one on **October 17** and another on **November 21**. The time and location of the mid-semester exams are the same as for the lectures: 6:20-8:10PM in 194M 203.

- The final exam will be during final exam week and is TBA.

All exams are cumulative. There are **no make-up exams**. Only reasons involving major medical incidents, grave family emergency and university athletics are valid excuses. Student must provide appropriate documentation, and whenever possible advanced notice must be provided. Otherwise, you will receive a “0” for any missed exams.

Grading Policy
Your course grade will be weighted and distributed as follows:

<table>
<thead>
<tr>
<th></th>
<th>Quizzes</th>
<th>Homework</th>
<th>Midterms</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades</td>
<td>5%</td>
<td>20%</td>
<td>45%</td>
<td>30%</td>
</tr>
</tbody>
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\[
\begin{align*}
\text{A} & : [100,92] \\
\text{A-} & : (92,89] \\
\text{B+} & : (89,86] \\
\text{B} & : (86,81] \\
\text{B-} & : (81,78] \\
\text{C+} & : (78,75] \\
\text{C} & : (75,65] \\
\text{D} & : (65,50] \\
\text{F} & : < 50
\end{align*}
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Grades will be posted to NYU Classes. **Pending student performance, a curve may be applied to course grades at the end of the semester.**

Other Class Policies
I expect students to contribute to our positive learning environment: **arrive on time** to class, **pay attention** for the duration of the class, **participate** meaningfully during class and **learn from one another**. I request **no eating** and **no cell phone, laptop or internet use** during class time, unless instructed, as it is a distraction to me and other students in the class. Students who disrupt our learning environment may be asked to leave.

This course will abide by NYU CAS academic policies and **honor code**.

Students must inform the instructor of any essential information as soon as possible. Two examples of "essential information" are:
- Disabled Students: Disabled students would need a longer period of time for exams (as determined by the Moses Center for Students with Disabilities) should contact the instructor at the start of the course. You will not be given extra time if you present this information just before an exam.
- Student Athletes, etc.: Students participating in an official university athletic, musical, or similar event, which will cause them to miss an exam, should contact the instructor as soon as they know of a scheduling conflict.

Five days after quizzes/homework/exams are graded, the grade becomes final. You should have any grading errors corrected during those five days. If you have any dispute with the grading, you should contact me.
General Advice
Read the textbook regularly. For each hour of the lecture, you should read the corresponding sections of the book for at least 1 hr and spend another 1-3 hours solving homework problems - not necessarily only those problems that have been assigned. (Note: According to the Carnegie Rule, 8-12 hours of outside-of-classroom study time is required to succeed in a typical 4 hour/week college course.)

Attend the lectures regularly! Attend office hours as much as possible - they can be amazingly helpful. To make the most of them, you should first read the text and try the homework problems yourself before coming to office hours.

Work ahead of deadlines. To memorise well a notion, you need think about it several times, with intervals of several days, and to sleep well. Understanding is fundamental for maths courses, rather than merely learning by heart. Students usually have different approaches and difficulties; we can discuss during office hours about your best learning strategy for this course.

Resources
Several resources are available to help students succeed in the course, in addition to lectures, office hours, and online resources available on the NYUClasses website. Peer tutoring is available at University Learning Center and Undergraduate Mathematics Tutoring Center. Students with disabilities must consult the Moses Center for Students with Disabilities for accommodations.