

# MAT 221 Linear Algebra

Block 1 August-September 2018

**Instructor:** Professor Scott Jordan

**Email:** sjordan@cornellcollege.edu

**Office:** Law Hall 204

**Office Hours:** By appointment

**Text:** *Introduction to Linear Algebra (5th edition)* by Gilbert Strang

ISBN: 978-0-9802327-7-6

**Class Meeting Times:** There will be Lecture/Discussion each morning from 9 a.m. until around 11 a.m. and afternoon class Monday through Friday from 1 p.m. until 2:30 p.m.

**Prerequisite(s):** The prerequisites for Linear Algebra are Calculus of a Single Variable-MAT 120 or MAT 121, and Calculus of Several Variables-MAT 122 or Discrete Math for Computer Science-CSC 151.

**Course Description from the Cornell Catalog:** Existence and uniqueness of solutions to linear systems. Linear transformations, linear independence, spanning vectors, vector spaces, basis and dimension, orthogonality, eigenvalues and eigenvectors. Students will be required to prepare written and oral presentations on a linear algebra application approved by the instructor.

## Course Objectives:

Upon Completions of MAT 221 a successful student will be able to

- determine when solutions to linear systems exist and if they are unique
- express an understanding that matrices are closely related to linear transformations
- understand the concepts and be able to read and write proofs related to vector spaces and subspaces, linear independence, and basis vectors
- demonstrate a mastery of fundamental ideas and algorithms related to eigenvalues and eigenvectors
- use technology related to linear algebra concepts and calculations

This course supports the Educational Priorities and Outcomes of Cornell College with emphasis on knowledge, inquiry, reasoning, and communication.

## How to be successful in MAT 221:

Accept responsibility for your own learning.

Be prepared for class - read the text before class.

Complete quizzes and assignments on time.

Don't get behind. Complete assignments as soon as possible. Seek help as soon as you realize you need it.

**Additional help for class:**

MIT Professor Gilbert Strang has recorded lectures on Linear Algebra that may be useful to view. The lectures can be access on the web:

<http://ocw.mit.edu/courses/mathematics/18-06-linear-algebra-spring-2010/video-lectures/>

**Homework:**

Homework is critical to your understanding of this course. The assignments are to help you prepare for the quizzes, exams, and the final exam. **No late homework will be accepted.** Make sure that your homework is worth grading. Failure to follow the following homework submission format will result in lost points, and may result in refusal of the submission entirely. I will collect homework in chapter packets. They will be due at the beginning of class two days after we finish the chapter.

**Take Home Quizzes:**

There will be quiz assigned at the end of each chapter. It will contain questions that pertain to anything covered in that chapter. The quizzes will be assigned at the end of the day where we finish the chapter. They will be due at the same time as the homework.

**Homework and Quiz Policies**

1. The homework and quiz for each chapter will be turned in at the same time. You need to staple the quiz and the chapter homework together, with the quiz on top.
2. Assignments that are not well-written, not well-organized, or are not clear to the reader will not be graded.
3. No late homework/quiz packets will be accepted.
4. A horizontal line drawn across the paper should intersect only one problem. (the horizontal line test :-))
5. It is your responsibility to ensure that pages in the submitted homework packets are in order, each section is clearly marked, and the it contains all the necessary work. If your homework packet fails on any of these areas, you will lose points. If the packet is missing pages, you will not be able to get credit for those missing pages.

**Exams:**

There will be two exams. Calculators, headphones, and other electronic devices are not allowed during exams.

**Grade Distribution:**

Homework/Quiz	30%
Presentation	10%
Exams	60%

## Letter Grade Distribution:

$\geq 93.00$	A	73.00 - 76.99	C
90.00 - 92.99	A-	70.00 - 72.99	C-
87.00 - 89.99	B+	67.00 - 69.99	D+
83.00 - 86.99	B	63.00 - 66.99	D
80.00 - 82.99	B-	60.00 - 62.99	D-
77.00 - 79.99	C+	$\leq 59.99$	F

I reserve the right to adjust this grade distribution as needed.

## Course Policies:

- **Communication and availability**

I am available most of the day. I leave my office sometime between 4-5 pm. I may be available to answer emails between 9-10 pm. If you email me after that time, don't expect a response till the next day.

- **Distractions**

Other than our classroom computer, no electronic devices (laptop computers, cell phones, pdas, mp3 players) may be used in our classroom while class is in session. Exceptions will be made in special cases, for example if these are used in an accommodation for a disability.

- **Drop**

I follow the college's policy on 15th day drops. i.e. in order to be eligible for a third Friday drop, you must attend class and complete all course work.

- **Academic Integrity**

Cornell College expects all members of the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, or data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgement of sources, whether intended or not, this may constitute a violation of the College's requirement for honesty in academic work and may be treated as a case of academic dishonesty. The procedures regarding how the College deals with cases of academic dishonesty appear in The Catalogue, under the heading "Academic Honesty."

- **Accommodations for Students with Disabilities**

Cornell College makes reasonable accommodations for persons with disabilities. Students should notify the Coordinator of Academic Support and Advising and their course instructor of any disability related accommodations within the first three days of the term for which the accommodations are required, due to the fast pace of the block format. For more information on the documentation required to establish the need for accommodations and the process of requesting the accommodations, see <http://www.cornellcollege.edu/academic-support-and-advising/disabilities/index.shtml>.