

MATH 3E — LINEAR ALGEBRA

Laney College, Fall 2019

Fred Bourgoïn

Class code: 41608

Days & times: MW 6:00–7:15 p.m. in G-209

Prerequisite: Math 3A (Calculus I)

Text: None required

Recom.: Bretscher, *Linear Algebra with Applications*, 4E

Instructor: Fred Bourgoïn

E-mail: fbourgoïn@peralta.edu

Office hours: MW 10–11 a.m. & 5–6 p.m., TTh 10:30–11:30 a.m. in G-201

Website: laney.edu/fredbourgoïn

Canvas: learn.peralta.edu

Course Description

Gaussian and Gauss-Jordan elimination, matrices, determinants, vectors in \mathbb{R}^2 and \mathbb{R}^3 , real and complex vector spaces, inner product spaces, linear transformations, eigenvalues, eigenvectors, and applications.

Student Learning Outcomes

These are the skills that you will have acquired upon completing the course.

- Diagnose application problems by applying systems of equations to the problems of curve fitting, electrical circuits, economic models, and communication technology.
- Modify and solve a system of equations using a variation of Gaussian Elimination and other methods, including the use of matrices.
- Construct a basis for a vector space, such as the kernel for a given transformation or the image of a given matrix.

Course Requirements

- *Homework.* Homework will be due weekly. Worth 15% of your grade, it is also your best preparation for the exams. Your homework should be legible, clean, stapled, and free of “fringes”; it should also contain your name and the assignment number. I will not grade homework that does not follow these guidelines. No late homework will be accepted.
- *Midterms.* There will be three midterms, each worth 20% of your grade. I do not give make-up tests.
- *Final Exam.* It will be comprehensive and count for 25% of your grade.

Grades

Your grade will be decided according to the usual scale: 90–100 is an A; 80–89 is a B; 70–79 is a C; 60–69 is a D; and 0–59 is an F.

Policies

- *Attendance.* You must attend each class session. If you must be absent, please let me know *in advance*.
- *Student Conduct.* Be on time, and be polite. Turn off cell phones, pagers, and other beeping devices. If you are disruptive you will be asked to leave. Take a few minutes to read the section titled “Five Principles of Student Academic Integrity” on pages 50–51 in the Laney College 2019–2020 Catalog.
- *Adding & Dropping.* It is **your responsibility** to add or drop the class. Don’t assume that if you don’t show up for some time I will automatically drop you. If you stop attending but don’t officially drop the class you will receive an F.
- *Cheating.* Are considered to be cheating: submitting work that is not your own; communicating with others (for any reason) during an exam; looking at someone else’s paper during an exam; consulting disallowed materials (notes, books, cheat sheets, etc.) during an exam; helping someone do any of these things. If you are caught cheating, you will receive 0 points for that assignment; more than one instance of cheating will earn you an appointment with the dean.

Calculators

A graphing calculator is not required for this class, but it would be very helpful.

Resources

I encourage you to form study groups. Fellow classmates can help. You can also come see me during office hours; I’ll be glad to help. The Math Lab (G-201) is open Monday–Thursday 9–7 and Friday 9–1. It is staffed with tutors chosen by the Math Department. Take full advantage of it; it’s a good place to do your homework and prepare for quizzes and exams.

Important Dates

- August 19: First day of instruction
- August 25: Last day to add without a permission number
- September 2: Labor Day (no classes)
Last day to add, or drop without a W
- September 16: **Exam #1**
- October 18: Last day to file for AA/AS
- October 22: Professional Day (no classes)
- October 23: **Exam #2**
- November 11: Veterans’ Day (no classes)
- November 15: Last day to drop with a W
- November 28–29: Thanksgiving holiday (no classes)
- December 27: **Exam #3**
- December 9: **Final Exam** (6–8 p.m.)

Detailed Schedule (Tentative)

Date	Lecture	HW Due	Exams
8/19	Intro; sec. 1.1		
8/21	Section 1.2		
8/25	<i>Last day to add without a permission number</i>		
8/26	Section 1.3	HW #1 (1.1–2)	
8/28	Sections 2.1–2		
9/2	<i>Labor Day; last day to add, or drop without a W</i>		
9/4	Sections 2.2–3		
9/9	Section 2.4	HW #2 (1.3, 2.1–3)	
9/11	Section 3.1		
9/16		HW #3 (2.4, 3.1)	Exam #1 (up to section 3.1)
9/18	Section 3.2		
9/23	Section 3.3	HW #4 (3.2)	
9/25	Section 3.4		
9/30	Section 4.1	HW #5 (3.3–4)	
10/2	Section 4.2		
10/7	Section 4.3	HW #6 (4.1–2)	
10/9	Section 5.1		
10/14	Section 5.2	HW #7 (4.3, 5.1)	
10/16	Section 5.3		
10/18	<i>Last day to file for AA/AS</i>		
10/21	TBA	HW #8 (5.2–3)	
10/22	<i>Professional Development Day (no classes)</i>		
10/23			Exam #2 (up to section 5.3)
10/28	Sections 6.1–2		
10/30	Sections 6.2–3		
11/4	Section 7.1	HW #9 (6.1–3)	
11/6	<i>No class</i>		
11/11	<i>Veterans' Day (no classes)</i>		
11/13	Section 7.2		
11/15	<i>Last day to drop a class with a W</i>		
11/18	Section 7.3	HW #10 (7.1–2)	
11/20	Section 7.4		
11/25	Section 7.5	HW #11 (7.3–4)	
11/27	Section 8.1		
11/28–29	<i>Thanksgiving holiday (no classes)</i>		
12/2		HW #12 (7.5, 8.1)	Exam #3 (up to section 8.1)
12/4	Review		
12/9			Final Exam (6–8 p.m.)