



Basic Course Information

Semester:	Spring 2026	Instructor Name:	Caroline Bennett
Course Title & #:	Math 230: Intro to Linear Algebra with Applications	Email:	caroline.bennett@imperial.edu
CRN #:	20632	Webpage (optional):	N/A
Classroom:	Bldg. 2700, Room 2721	Office #:	Bldg. 2700, Room 2765
Class Dates:	2/18/2026 – 6/10/2026	Office Hours:	Mon/Wed: 1:30 – 2:30 pm Tues/Thurs: 3:30 – 4:30 pm
Class Days:	Mon / Wed	Office Phone #:	(760) 355 – 6124
Class Times:	3:45 – 5:10 pm	Emergency Contact:	(760) 355 – 6155
Units:	3.00	Class Format/Modality:	Face – to – Face

Course Description

A first course in linear algebra intended for students majoring in mathematics, the physical sciences, engineering or business. This course develops the techniques and theory needed to solve and classify systems of linear equations. Solution techniques include row operations, Gaussian elimination, and matrix algebra. Investigates the properties of vectors in two and three dimensions, leading to the notion of an abstract vector space. Vector space and matrix theory are presented including topics such as inner products, norms, orthogonality, eigenvalues, eigenspaces, and linear transformations. Selected applications of linear algebra are included. (C-ID: MATH 250) (CSU/UC)

Course Prerequisite(s) and/or Corequisite(s)

PREREQUISITE: MATH 194 with a grade of “C” or better.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Perform matrix operations, and compute determinants, eigenvalues,/vectors, and inverses.
2. Understand and apply the relationship between linear transformations, matrices and systems of equations.
3. Analyze, synthesize, and evaluate theorems in Linear Algebra.

Textbooks & Other Resources or Links

Textbook: Lay, David; Lay, Steven; McDonald, Judi. 2020. *Linear Algebra and Its Applications*. 6th Pearson. ISBN: 9780135851258.

Calculator: A graphing calculator is recommended, but it is not required.



Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Find solutions of systems of equations using various methods appropriate to lower division linear algebra.
2. Use bases and orthonormal bases to solve problems in linear algebra.
3. Find the dimension of spaces such as those associated with matrices and linear transformations.
4. Find eigenvalues and eigenvectors and use them in applications.
5. Prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors; properties of subspaces; linearity, injectivity and surjectivity of functions; and properties of eigenvectors and eigenvalues.

Course Grading Based on Course Objectives

EVALUATION:

Projects/Quizzes	50
3 exams × 150 points each	450
Final Exam (cumulative)	+ 200
	<u>700</u>

GRADING SCALE

630 – 700	A
560 – 629	B
490 – 559	C
420 – 489	D
Below 420	F

The grade that is earned, according to the point scale above, is the grade that will be received. Grades are not subjective. Grades are not negotiable. All students will be treated equally.

NOTE: The final exam in this course is cumulative and mandatory for all students.

NOTE: In cases of “borderline grades” (e.g., 69%), it is at the instructor’s discretion as to whether to “round up” to the next letter grade. Factors such as attendance and classroom behavior may be considered. Students who are disruptive during class (e.g. talking, leaving mid-class), or are seen looking at their phones or wearing ear buds, will NOT have their final grades rounded up in such cases.



Course Requirements and Instructional Methods

PRACTICE PROBLEMS: Recommended practice problems will be listed for each section that we cover from the Lay text (Canvas → Pages → View All Pages). This is your source of practice so that you can reinforce the concepts that we cover in class and master the skills necessary for the subsequent math courses you will be taking. *These practice problems are NOT collected for points; however, your performance on exams (and therefore your exam scores and overall course grade) depends directly upon how many problems you have practiced. In this sense, it WILL affect your grade.*

PROJECTS: The only collected homework may come in the form of Projects that will appear as typed problem sets in Canvas (Canvas → Files → Projects). A total of 1 – 3 Projects may be given over the semester. You may work individually or in groups on Projects.

QUIZZES: Some quizzes MAY occur throughout the semester. Quiz dates are NOT included in the Course Calendar as exam dates are, since quizzes are on a largely “as-needed” basis dependent upon the overall skill level and progress of the class, which differs each semester/summer session. [For example, if a large number of students are struggling in a particular section due to a prerequisite deficiency regarding a specific algebra skill such as factoring, then we may have a quiz with problems involving that particular skill, to encourage students to review and practice it.] If/when they take place, upcoming quizzes will be announced both in class and on Canvas.

EXAMS: There will be 3 regular exams at 150 points each. All exams are closed-book and closed-note. A scientific calculator MIGHT be allowed during exams (will be announced ahead of time for each exam). Absolutely NO graphing calculators, NO cell phones or other electronic devices may be used during any exams. Any students wearing Apple watches will be required to remove them during exams.

Students may NOT leave the room during exams. Plan accordingly.

NOTE: Your lowest exam score will NOT be dropped or replaced by a Make-Up Exam score. All of your exam scores will count. Therefore, you should maintain the habit of staying on top of the material and studying rigorously all semester long.

FINAL EXAM: The Final Exam is cumulative and mandatory for all students.

MAKE-UP EXAMS: Missing an exam should be a rare occurrence. However, each student has the opportunity to make up ONE missed exam in the event of a true emergency. This opportunity is the Universal Make-Up Exam, which takes place toward the end of the summer session (see Course Calendar for exam dates). Any student who misses a test will take the same Universal Make-Up Exam, regardless of which exam needs replacing. This Make-Up Exam will contain material from each of Exams 1 – 3.



Course Policies

ATTENDANCE

- **A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class.** Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class.
- Regular attendance in all classes is expected of all students. **A student with excessive unexcused absences may be dropped by the instructor.** [Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.] Math 230 is a 3-unit course; therefore, any student with 3 or more unexcused absences should meet with the instructor to discuss their further enrollment in the course.

NOTE: With the above information notwithstanding, students should never ASSUME that they have been dropped from a class if attendance has stopped. As per the Course Catalog: **"Be aware, it is always the student's responsibility to withdraw officially from classes. In no case should students presume they have been dropped by the instructor."** Please see the Course Catalog for further details.

NOTE: Attendance may be taken during class; however, students do not receive points for attendance. It is done for data purposes (census, financial aid, etc.).

Please note: Office hours are a time for additional questions, clarifications, further examples, etc., to supplement what was covered in class. **Office hours are NOT to be used for repeating entire lectures for students who missed class.** If you must be absent for any reason, then it is your responsibility to catch up on whatever material you missed that day.

I do not provide copies of my lecture notes or videos for students who are absent; therefore, if you are absent, it will be necessary to catch up by obtaining lecture notes from a classmate, reading the textbook, and/or finding other resources to help you catch up on whatever material was missed.

Financial Aid

Your Grades Matter! In order to continue to receive financial aid, you must meet the Satisfactory Academic Progress (SAP) requirement. Making SAP means that you are maintaining a 2.0 GPA, you have successfully completed 67% of your coursework, and you will graduate on time. If you do not maintain SAP, you may lose your financial aid. If you have questions, please contact financial aid at finaid@imperial.edu.

NOTE: It is not the instructor's responsibility to give students the grades they 'need' in order to keep their financial aid. If you 'need' a certain grade in order to keep your financial aid, then you must ensure that you work hard enough to **earn** that grade.



ACADEMIC HONESTY:

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment, (e) use of a commercial term paper service.

- The consequences of academic dishonesty are severe and may include the possibility of expulsion. For further information, refer to the Standards of Student Conduct in the 2025-2026 General Catalog.

Academic Honesty (Artificial Intelligence – AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. **Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism** unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.



Other Course Information

Out-of-Class Commitment: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. The Western Association of Schools and Colleges (WASC) has adopted a similar requirement. Since Math 230 is a 3-unit class, **during a 16-week fall or spring semester, you should plan to spend a bare minimum of 6 – 9 hours per week** working on homework, studying, working with a tutor, etc., outside of class time, in order to achieve success.

The above-state guideline is for students with proficient prerequisite skills. If you have prerequisite deficiencies (e.g. lacking necessary foundational skills from algebra), then you should be planning to commit at least an additional 2 – 4 hours per week acquiring these prerequisite skills, **ON TOP** of the hours every week working on Math 230 skills.

The aforementioned guidelines come from the Department of Education and WASC. However, **realistically, since Math 230 is a more advanced course demanding higher levels of abstract thinking, critical thinking, and analytical skills, you should be planning to commit up to 10 – 15 hours per week studying for this class.**

Accessibility Statement

Imperial Valley College is committed to providing an accessible learning experience for all students, regardless of course modality. Every effort has been made to ensure that this course complies with all state and federal accessibility regulations, including Section 508 of the Rehabilitation Act, the Americans with Disabilities Act (ADA), and Title 5 of the California Code of Regulations. However, if you encounter any content that is not accessible, please contact your instructor or the area dean for assistance. If you have specific accommodations through **DSPS**, contact them for additional assistance.

We are here to support you and ensure that you have equal access to all course materials.



IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

CANVAS LMS: Canvas is Imperial Valley College's Learning Management System. The [Canvas Student Guides Site](#) provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.

IVC's services include, but are not limited to:

- Tutoring Labs
- Career Services Center
- Child Development Center
- Student Counseling and Health Services
- Military and Veteran Success Center
- Extended Opportunity Program and Services (EOPS)
- Disabled Student Programs and Services
- Student Equity & Achievement Program*
- Library Services and Information Literacy

***What if I cannot afford food, books, or need other help?**

The Student Equity & Achievement Program has many resources that are available to you. Please tell us what you need by submitting your request(s) here:

<https://www.imperial.edu/legacy/students/assessment-center/>



Anticipated Class Schedule/Calendar

(*With the exception of the Final Exam, these dates are tentative and subject to change with or without prior notice!)

Monday	Wednesday	Weekly Goals
2/16 HOLIDAY – NO CLASS	2/18 First day of class	1.1 – 1.3
2/23	2/25	1.4 – 1.6
3/2	3/4	1.7 – 1.9
3/9	3/11	1.9, 2.1 – 2.2
3/16	3/18 EXAM 1	2.3; exam
3/23	3/25	2.3 – 2.5
3/30	4/1	(2.6 – 2.7), 2.8 – 2.9
4/6 S P R I N G B R E A K	4/8 N O C L A S S E S	
4/13	4/15	3.1 – 3.3
4/20	4/22	4.1 – 4.3
4/27	4/29 EXAM 2	4.4; exam
5/4	5/6	4.5 – 4.7; (4.9)
5/11	5/13	5.1 – 5.4
5/18	5/20	5.4 – 5.5; 6.1
5/25 HOLIDAY – NO CLASS	5/27	6.2 – 6.4; 7.1
6/1	6/3 EXAM 3	Catch-up; exam
6/8 Catch-up, review	6/10 FINAL EXAM	

IMPORTANT DATES AND DEADLINES:

February 28	Last day to add class
March 1	Last day to withdraw without owing fees and/or be eligible for refund
March 1	Last day to withdraw without course appearing on transcripts (without receiving a “W”)
April 6 – 10	Holiday (Spring Break)
May 17	Last day to withdraw and receive a “W”
May 25	Holiday (Memorial Day)
June 10	Final Exam (comprehensive)



GET TUTORING HELP WHEN YOU HAVE QUESTIONS



Our class's own **embedded tutor, Cristian Castillo**, will be holding free tutoring sessions for several hours each week (solely for students in our Math 230 class) at these days/times:

[Dates/times of review sessions will be posted here when info becomes available]

1

You may attend these sessions in person at the IVC Library (no appointments required). If you cannot attend in person, you may also use the following Zoom link:

<https://www.imperial.edu/student-support/study-skills-center/>

The Learning Services Department is offering math tutoring both in person at the IVC Library and online through Zoom:

<https://www.imperial.edu/students/learning-services/study-skills-center/>

2

Or, simply click on "IVC Tutoring" from the menu on the left of our Math 230 Canvas page to their online tutoring. For both in-person and online tutoring, appointments are not necessary for "drop-in" sessions.

I will be holding office hours each week at the following days and times:

3

Monday/Wednesday: 1:30 – 2:30 pm

Tuesday/Thursday: 3:30 – 4:30 pm

4

Students majoring in STEM related majors may also qualify for the MESA program, which provides free tutoring in math classes up through Calculus III, in addition to information about scholarship opportunities, internship opportunities, and more!

The MESA Center is located in the 4100 building. Please refer to the flyers provided by the MESA presentation in our class earlier this semester. Their spring 2026 tutoring schedule will be linked from our Canvas landing page when available.

"Never regard your study as a duty, but as the enviable opportunity to learn to know the liberating influence of beauty in the realm of the spirit for your own personal joy and to the profit of the community to which your later work belongs."

-- Albert Einstein

