



## Basic Course Information

Semester:	<b>Fall 2025</b>	Instructor Name:	<b>Jeffrey Burt</b>
Course Title & #:	<b>Intro Linear Algebra w/Apps.</b>	Email:	<b>Jeff.burt@imperial.edu</b>
CRN #:	<b>10065</b>	Webpage (optional):	<b>NA</b>
Classroom:	<b>2728</b>	Office #:	<b>2765</b>
Class Dates:	<b>8/11-12/6</b>	Office Hours:	<b>M/W 9:30-10, 12:45-1:15 T/TH 10:10-11:10</b>
Class Days:	<b>T/TH</b>	Office Phone #:	<b>(760)355-6489</b>
Class Times:	<b>2:40-4:05</b>	Emergency Contact:	<b>email</b>
Units:	<b>3</b>	Class Format/Modality:	<b>in person</b>

## 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)

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

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. (ILO2)
2. Understand and apply the relationship between linear transformations, matrices and systems of equations. (ILO2)
3. Analyze, synthesize, and evaluate theorems in Linear Algebra. (ILO2)

## 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.

## Textbooks & Other Resources or Links

Lay, Linear Algebra and Its Applications (6th Edition) ISBN 13: 978-0135882801

A graphing calculator is helpful and can be rented from the campus for a small fee each semester.

Updated 11/2024

## Course Requirements and Instructional Methods

### Homework

Homework will be assigned at each class meeting. It is due on Tuesdays and must be turned in as a pdf on Canvas. The pdf must be in the correct order to count for credit.

### Quiz

A quiz may be given at any time during any class period. It may not be announced. The number of quizzes or group work in the semester will be instructor's discretion. The purpose is to provide a feedback on the learning outcome. The lowest 2 scores will be dropped.

### Tests

There will be three tests. The purpose of these tests is to check your understanding of the concepts covered in the course. Most of the questions on these tests will require showing a significant amount of work. A correct answer with insufficient work will receive partial credit or no credit.

### Final Exam

At the end of the semester, a COMPREHENSIVE/CUMULATIVE Final Exam will be given. If you miss the final, it will be recorded as a zero.

Out of Class Assignments: 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. WASC has adopted a similar requirement

## Course Grading Based on Course Objectives

There will be 3 in class exams, each worth 20% of your grade. The final is comprehensive and is worth 20% of your grade. There are no make-ups for the exams or final. Plan to be here for the exam dates in the schedule, but also note that those dates can change, so make sure you are paying attention and staying up to date. Any missed exam will result in the grade of a '0'.

The combined total of your quizzes is worth 10% of your grade. Your lowest two quizzes will be dropped. There are no make ups.

Your homework is worth 10% of your grade.

Grading: You need at least a total of 70% for a 'C' grade. It is broken down as follows

Quizzes	10%
HW	10%
Exams	60%
Final	20%
Total	100%

The grade categories are as follows: A 100%-90%, B 89.9%-80%, C 79.9%-70%, D 69.9%-60%, F 59.9%-0%

Attendance, class participation and a subjective instructor's interpretation of work may be used in assigning a final grade to borderline cases.

Updated 11/2024



### **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.

### **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.



## Course Policies

The goal of this course is for you to gain the necessary skills and knowledge to do well, and improve your mathematical abilities, so you are able to succeed in future courses. My responsibility is to help you in any way I can to accomplish these goals, however it is your responsibility to be committed to your own success and keep up with the pace of the class. To do so you need to complete assignments on time and please ask questions when you have them.

**Out of Class Assignments:** 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. WASC has adopted a similar requirement. This means you should plan on 3 hours of class time, plus an additional 6 hours each week for working outside of class. This means you should spend at least 9 hours working on math each week.

### Course Rules:

- 1) Late work is not accepted. If you are going to be gone, contact me before the absence to make arrangements.
- 2) There are no make up tests.
- 3) It is your responsibility to drop or withdraw the class. Failure to do so will result in a regular grade (most probably an F).
- 4) Regular attendance is recommended and expected. The instructor can drop you from the class if you have more than the allowed number of absences.
- 5) You need to ask questions whenever you have them. If not in class, please come to my office during office hours, call me, email me, go to the math lab, google it, YouTube it, etc.
- 6) It is your responsibility to make up the work you missed if you are absent. I highly recommend finding someone else to copy notes and material from that were covered in your absence.

## 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](mailto:finaid@imperial.edu).

## 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.

## Anticipated Class Schedule/Calendar

	Introduction 1.1, 1.2, 1.3
Week 1: Aug 11 - Aug 17	
Week 2: Aug 18 - Aug 24	1.4, 1.5, 1.6
Week 3: Aug 25 - Aug 31	1.7, 1.8, 1.9
Week 4: Sep 1 - Sep 7	<b>Holiday</b> 1.9, 2.1, 2.2
Week 5: Sep 8 - Sep 14	2.3, Exam 1
Week 6: Sep 15 - Sep 21	2.3, 2.4, 2.5
Week 7: Sep 22 - Sep 28	(2.6, 2.7), 2.8, 2.9
Week 8: Sep 29 - Oct 5	3.1, 3.2, 3.3
Week 9: Oct 6 - Oct 12	4.1, 4.2, 4.3
Week 10: Oct 13 - Oct 19	4.4, Exam 2
Week 11: Oct 20 - Oct 26	4.5, 4.6, 4.7, 4.9
Week 12: Oct 27 - Nov 2	5.1, 5.2, 5.3, 5.4
Week 13: Nov 3 - Nov 9	5.4, 5.5, 6.1
Week 14: Nov 10 - Nov 16	<b>Holiday</b> 6.2, 6.3, 6.4, 7.1
Week 15: Nov 17 - Nov 23	Review, Exam 3
Week 16: Nov 24 - Nov 30	<b>Thanksgiving break</b>
Week 17: Dec 1 - Dec 6	Final Exam

\*\*\*Subject to change without prior notice\*\*\*