



IMPERIAL VALLEY COLLEGE

**Note to Instructor: Replace the placeholder text beneath the headings with the appropriate information for your course. Please note that all sections, with the exception of "Other Course Information," are required elements.**

## Basic Course Information

Semester:	SPRING 2022	Instructor Name:	ERIC LEHTONEN
Course Title & #:	M230 LINEAR ALGEBRA	Email:	<a href="mailto:eric.lehtonen@imperial.edu">eric.lehtonen@imperial.edu</a>
CRN #:	20632	Webpage (optional):	
Classroom:	2721	Office #:	2763
Class Dates:	2/14/22 -6/8/22	Office Hours:	MW 5:30-6:30 PM
Class Days:	MW	Office Phone #:	(760)355-6522
Class Times:	3:45-5:10 PM	Emergency Contact:	(619)517-3742
Units:	3	Class Format:	IN PERSON

## 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)

**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.

## 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

## Textbooks & Other Resources or Links

- Lay, David 2014. *Linear Algebra and Its Applications* 5th. Addison Wesley ISBN: 978-0321982384 . The 4<sup>th</sup> ed. Work as well

## Course Requirements and Instructional Methods

### Calculator:

Scientific calculator: TI-30 or equivalent, **NO GRAPHING CALCULATORS!**

The course will be in a standard lecture format.

### Grading

Tests 50%. There will be 3 tests. You will be allowed to drop the lowest test.

Final Exam 30%. There will be a comprehensive final exam.

Quizzes and outside assignments: 20%, There will be regular quizzes on CANVas. They will be based on the homework.

I WILL NOT COLLECT THE HOMEWORK. THE FIRST STUDENT TO ASK WILL BE MADE FUN OF.



---

**NOTE: ALL TEST WILL BE IN THE CLASSROOM.**

---

### **Course Policies**

**Take this nonsense with a grain of salt, EXCEPT FOR THE PART ABOUT ACADEMIC HONESTY.**

### **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. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

### **Classroom Etiquette**

**ONLY ONE REAL RULE: DON'T MAKE MAD.**



- 
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed.
  - Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
  - Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

## Academic Honesty

- 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 School 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) using a commercial term paper service.

## **Additional Help – Discretionary Section and Language**

- Blackboard support center: <http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543> (Links to an external site.)
- Learning Labs: There are several ‘labs’ on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Study Skills Center (library). Please speak to the instructor about labs unique to your specific program.
- Library Services: There is more to our library than just books. You have access to tutors in the Study Skills Center, study rooms for small groups, and online access to a wealth of resources.

## **Disabled Student Programs and Services (DSPS)**

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313, if you feel you need to be evaluated for educational accommodations.

## **Student Counseling and Health Services**

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>

[\(Links to an external site.\)](#)



IMPERIAL VALLEY COLLEGE

. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

## Student Rights and Responsibilities

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities, please refer to the IVC General Catalog available online at

[http://www.imperial.edu/index.php?](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

[option=com\\_docman&task=doc\\_download&gid=4516&Itemid=762](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

(Links to an external site.)

## Information Literacy

**Required Language:** Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources.

Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

(Links to an external site.)

## IVC Student Resources

### Anticipated Class Schedule/Calendar

#### Week 1

Date or Week	Activity, Assignment, and/or Topic
FEB 14	Introduction 1.1
FEB 16	1.2,1.3



FEB 21	HOLIDAY
FEB 23	1.4
FEB 28	1.5
MAR 7	1.7
MAR 9	1.8,1.9
MAR 14	REVIEW
MAR 16	TEST 1
MAR 21	2.1
MAR 23	2.2,2.3
MAR 28	2.4
MAR 30	2.5
APR 4	2.7
APR 6	2.9
APR 11	REVIEW
APR 13	TEST 2
APR 18	SPRING BREAK
APR 20	SPRING BREAK
APR 25	3.1,3.2
APR 27	3.3
MAY 2	4.1,4.2
MAY 4	REVIEW
MAY 9	4.3,4.4
MAY 11	4.5,4.6
MAY 16	4.7
MAY 18	5.1,5.2
MAY 23	5.3,5.4
MAY 25	REVIEW
MAY 30	HOLIDAY
JUN 1	TEST 3
JUN 6	FINAL REVIEW
JUN 8	FINAL EXAM

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



IMPERIAL VALLEY COLLEGE

---