IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Spring 2021**	Instructor Name:	**Jeff Burt**
Course Title & #:	**Intro Linear Algebra w/Apps.**	Email:	**jeff.burt@imperial.edu**
CRN #:	**21372**	Webpage (optional):	**None**
Classroom:	https://cccconfer.zoom.us/j/4049169529	Office #:	**2765**
Class Dates:	**2/16-6/11/2021**	Office Hours:	**TBA**
Class Days:	**M/W**	Office Phone #:	**7603556489**
Class Times:	1-2:25pm	Emergency Contact:	**email**
Units:	3	Class Format:	Online, synchronous

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 (5th Edition) ISBN 13: 978-0321982384

A graphing calculator is also helpful but not required. Cell phones are not allowed on exams. TI 84, TI Nspire are popular, but any graphing calculator should work. Casio's are good and much cheaper, but not as popular.

Course Requirements and Instructional Methods

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 arraignments.
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.

Course Grading Based on Course Objectives

There will be 3 in class exams, worth 100 points each. The final is comprehensive and is worth 150 points. 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 homework is worth 125 points. Your lowest homework assignments will be dropped. There are no make ups.

Grading: You need at least 385 combined points for a 'C' grade. It is broken down as follows

Homework	100 points
Exams	300 points
Final	150 points
Total	550 points

So that means every 55 points is a letter grate. 550-495 = A; 494-440 = B; 439- 385 = C, 384 – 330 = D, 329 – 0 = F

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

Course Policies

You are expected to be in class on time. You are expected to have academic integrity, and any cheating will result in a 0 on that particular assignment, and notification of dishonesty to the school.

If you are struggling here are some very helpful suggestions:

1) Read the material before you come to class. I cannot stress enough how much it can help to look at what we will be covering. Use the schedule at the end of the syllabus.
2) Form a study group with other students in class.
3) Come to office hours. I'm happy to go over absolutely anything you have questions about, even if you think it is too easy. Office hours are for questions and I really enjoy helping out.
4) Use the free tutoring! It is awesome. Math tutoring at universities costs over $40 per hour, and you have access to it for free.
5) Youtube is amazing. There are many many many quality videos on intro linear algebra.

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.

Subject to change without prior notice

Week 1 2/16 – 2/19	1.1, 1.2, 1.3
Week 2 2/22 – 2/26	1.4, 1.5, 1.6
Week 3 3/1– 3/5	1.7, 1.8, 1.9
Week 4 3/8 – 3/12	1.9, 2.1, 2.2
Week 5 3/15 – 3/19	2.3, **Exam 1**
Week 6 3/22 – 3/26	2.3, 2.4, 2.5
Week 7 3/29 – 4/2	(2.6, 2.7), 2.8, 2.9
Week 8 4/5 – 4/9	Spring Break
Week 9 4/12 – 4/16	3.1, 3.2, 3.3
Week 10 4/19 – 4/23	4.1, 4.2, 4.3
Week 11 4/26 – 4/30	4.4, **Exam 2**
Week 12 5/3 – 5/7	4.5, 4.6, 4.7, 4.9
Week 13 5/10 – 5/14	5.1, 5.2, 5.3, 5.4
Week 14 5/17 – 5/21	5.4, 5.5, 6.1, 6.2
Week 15 5/24 – 5/28	Holiday, 6.3, 6.4, 7.1
Week 16 5/31 – 6/4	Review, **Exam 3**
Week 17 6/7 – 6/11	**Final Exam**