

Course Information

Course Number:	Math 3320
Course Name:	Linear Algebra and Matrices
CRN:	12252
Location:	MCS 219
Class Hours:	MWF 11:00-11:50am
Textbook:	Linear Algebra with Applications by Holt.
Prerequisites:	Math 1497 or Math 2330

Instructor Information

Name:	Dr. Jeffrey Beyerl
Office Location:	MCS 237
E-mail:	jbeyerl@uca.edu
Phone:	501-450-5652

Office Hours: By appointment or walk-in. Designated walk-in times are:

Monday	9:00-9:50am; 12:40-1:30pm
Tuesday	8:00-9:15am
Wednesday	9:00-9:50am; 12:40-1:30pm*
Thursday	8:00-9:15am
Friday	9:00-9:50am

*The afternoon office hours on Wednesday are in the MRC

Sometimes my schedule changes; any changes will be reflected on the calendar outside my office.

Course Description

This course is required for all majors in mathematics, physics, and computer science. This course introduces matrix algebra, vector spaces, linear transformations, and Eigenvalues. Optional topics include inner product spaces, solutions to systems of differential equations, and least squares.

Course Objectives and Requirements

The primary objective in this course is to understand linear systems, linear spaces, linear operators, and matrix algebra.

Grading Policy

Your grade will be computed from quizzes, three tests, a project, and a final exam. Quizzes will be given at the conclusion of each topic covered. Quizzes cannot be made up for any reason, however when missed due to an excused absence a quiz may be dropped.

Tests will be administered approximately one-third into the semester, two-thirds into the semester, and the last week of class. Make-up tests will only be given for official university events or personal emergencies. In the former case the test must be taken before official test date, in the latter case a short letter explaining why you missed the test, why this justifies a make-up, and supporting documentation must be turned in by the next class day.

The final exam is cumulative and is a significant portion of your course average; it may also be used by the department for internal assessment.

An optional homework notebook can be completed, replacing either a test or fifteen thirty fifths of the final exam, whichever is lowest.

The professor reserves the right to add up to two percentage points to the course average for any student that has shown genuine mastery of the course concepts.

Project	5%
Quizzes	15%
Test 1	15%
Test 2	15%
Test 3	15%
Final Exam	35%

Course Average	Course Grade
[90,100]	A
[80,90)	B
[70,80)	C
[60,70)	D
[0,60)	F

Critical Inquiry Project

There will be one cumulative project based on the material in this course. Following a method of analysis discussed in class, you will investigate the application of linear algebra to a topic of your choice (topics must be discussed with and approved by the instructor). The projects will be evaluated based on the common critical inquiry rubric and are worth 5% of the course grade.

Student Learning Objectives

- Be able to solve linear systems in a systematic manner.
- Be able to determine linear dependence and independence of vectors.
- Be able to relate vectors to relevant vector spaces.
- Be able to find and meaningfully interpret the dimension of a vector space.
- Be able to demonstrate the duality between linear operators and matrices.
- Be able to perform algebraic operations on matrices.
- Be able to find bases and perform a change-of-basis.
- Be able to find and meaningfully interpret determinants.
- Be able to find eigenvalues, eigenvectors, and describe their nature.
- Be able to diagonalizable a matrix and find powers of matrices

Attendance Policy

Your active participation in this course is expected and required for you to learn the material and earn a passing grade. If you fail to regularly and actively participate it will demonstrate that you are not making a reasonable effort to complete this course, and you will be administratively dropped for non-attendance with a grade of WF.

Academic Integrity Statement

The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

Americans with Disabilities Act Statement

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Office of Disability Services, 450-3613.

Title IX disclosure:

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs and the obligation to conduct an investigation will depend on those specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: <https://uca.edu/titleix>. *Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

Sexual Harassment and Academic Policies Statement

All students are required to familiarize themselves with the University of Central Arkansas policy on sexual harassment and on academic policies. These policies are printed in the Student Handbook.

Building Emergency Plan Statement

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at <http://uca.edu/mysafety/bep/>. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.