Course Information

Course Number:	Math 3320
Course Name:	Linear Algebra
CRN:	28854
Location:	MCS 211
Class Hours:	10:50am-12:05pm TTh
Textbook:	Linear Algebra with Applications by Holt, second edition
Prerequisites:	Math 1497 or Math 2330

Instructor Information

Name:	Dr. Jeffrey Beyerl
Office Location:	MCS 231
E-mail:	jbeyerl@uca.edu
Phone:	501-450-5681

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.

Office Hours

My availability changes every day. Go to the website below for up to date availability. When you schedule an appointment, please specify what you're coming for.

Walk-ins are also welcome: if my office door is open, I'm available. However, if somebody with an appointment comes, they will receive priority.

Office Hours Website: https://ucamath.youcanbook.me/

Course Objectives and Requirements

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

Software Requirements

Tests and quizzes will be designed to be completed without the aid of technology. However, many of the homework exercises can become tedious if completed by hand. You should become familiar with a computer algebra system to aid you on the homework. Wolfram Alpha will be used in class; other options include calculators such as TI-89, TI NSpire CAS or software packages such as Maple, Mathematica, R, MATLAB, Octave, Sage and others. Some of these software packages are installed on the computers in the Math Resource Lab.

Grading Policy

- **Homework**
  Homework problems will be assigned on a weekly basis. Some problem(s) will be graded for correctness; others will be graded for completion. Poorly presented work will result in a 10% penalty.
- **Tests**
  All tests are written full-class-length non-calculator test. Each one is cumulative.
- **Quizzes**
  There will be quizzes from time to time, often (but not necessarily always) on Fridays.
- **Borderline Grades**
  Borderline grades will be determined based on the final exam and/or the quality of your work throughout the course.

Test 1	15%
Test 2	15%
Test 3	15%
Quizzes	5%
Homework	10%
Project	10%
Final Exam	15%
Max(Final Exam, Test Average)	15%

Student Learning Objectives

Students who complete this course will have knowledge

- about various properties of matrices including but not limited to:
  - Solving linear systems in a systematic manner.
  - Determining linear dependence and independence of vectors.
  - Relating vectors to relevant vector spaces.
  - Finding and meaningfully interpreting the dimension of a vector space.
  - Demonstrating the duality between linear operators and matrices.
  - Performing algebraic operations on matrices.
  - Finding bases and performing a change-of-basis.
  - Finding and meaningfully interpreting determinants.
  - Finding eigenvalues, eigenvectors, and describing their nature.
  - Diagonalizing a matrix and find powers of matrices
- to solve system of linear equations using matrices.
- to use system of equations to model various applications

Important Dates

Last day to Drop Drop means the course is not on your record	January 15th
Test 1	February 6th
Test 2	March 5th
Last day to Withdraw Withdraw means the course is on your record with a "W" but does not factor into your GPA	March 30th
Project First Version Due	April 3rd
Test 3	April 16th
Project Presentations	April 21st and 23rd
Project Final Version Due	April 24th
Final Exam	Thursday April 30th 11am-1pm

Outside of class resources
- The Textbook
    - Description of material
    - Example problems
    - Exercise problems
    - Homework problems
- Blackboard
    - Quiz/test solutions
    - Notes from class
- Office Hours
    - Individual help
    - Availability changes every day. See https://ucamath.youcanbook.me/ for up to date availability
- Previous course materials
    - http://faculty.uca.edu/jbeyerl/courses.html
- The Math Resource Lab
    - Study Area
    - Tutors available throughout the day
- Academic Success Workshops (every Tue at X-period)
    - http://uca.edu/studentsuccess/academic-success-workshops/
- Online Success Workshops (reading strategies, note-taking skills, test prep, etc!)
    - http://uca.edu/studentsuccess/academic-success-workshops/
- Peer Coaching (time management skills, study skills, motivation!)
    - http://uca.edu/studentsuccess/successcoaching/
- Communication Skills (oral and written)
    - http://uca.edu/cwc/

Late Work
Homework assignments may be turned in late for a 20% penalty. They will be kept by the instructor; at the end of the semester if there is a chance they can affect your course letter grade, they will be graded.

Expected Study Time
A good rule of thumb is that to be successful in a college course, you should work on your own two hours for every one hour of lecture. This course has 3 hours of lecture per week, so you should plan on studying 6 hours per week for this course. If you are well prepared you may need to study less; if you are not well prepared you may need to study more. If this is your first semester in college, please experiment with different study techniques throughout the course of the semester to figure out what works best for you. You can schedule a study technique consolation during office hours if you would like assistance developing a study plan.

Excused Absences
If you are part of an organization that includes official university trips, you will be excused from each day that you are on travel as long as you contact me each time to make arrangements for any missed work. It is your responsibility to make arrangements to make up any missed work before you leave for the trip. If you are going to miss a test or quiz, you must contact me approximately one week beforehand to make arrangements for the make-up, preferably by email.
For personal emergencies, you should contact me when it is safe and reasonable to do so, include documentation of the emergency. At his discretion, the instructor may choose to administer a make-up, issue a zero, or use the final exam to replace the missing test or quiz.

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 miss more than two weeks of class meetings throughout the term, you may be administratively dropped from the course.

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.
Academic integrity is taken seriously: cheating on a test or project will result in a failing grade in the course; allowing another student to copy off of your test will result in a one-letter-grade penalty.

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.

Advice given by other students to future students who are considering taking this course (or section)
(From the end of semester course evaluations)

- TURN IN THE HOMEWORK. It's easy points!
- work hard, and understand what you know and dont know, you will never do bad on his tests is you know what you dont know. so be ready
- i'm going to be honest, the grading system for tests is so backwards that I would strongly suggest, if Dr. Beyerl doesn't change it, that any student trying to take this course take it with another instructor.
- be prepared to think outside of what you thought you knew
- Study way too much for this course, if you math isn't your strong suit, this class is going to suck for you, the professor is nice, but the concepts are very difficult.
- Turn in all of your homework on time, study the material for quizzes, exams, and oral problem presentations, and also when it's time to do the project paper, find a concept that is somewhat easy to understand or that at least one person clearly understands the subject well.
- Be prepared to constantly check the professor's arithmetic and problem–solving because he makes a lot of mistakes and will then confuse himself and others.
- For a high–level math class, it was not that difficult. Just pay attention and do not miss class.
- If you don't attend every class, you won't make it through.
- Go to class and make sure you understand the assigned sections in the book. Try not to take too much notes in class
- Go to class because new helpful methods are taught every day. Also, start homework at the beginning of the week and work until you reach material you have not covered. The homework load is a lot and if you get a head start on it, it will be very do–able and stress free.
- GO TO CLASS FOR THE LOVE OF GOD, and look up his website for past classes for test examples & quizzes.
  He is always in his office every day SCHEDULE AN APPPOINTMENT
- Always come to class and finish homework and practice before each exam
- Make sure that you're willing to study to be successful in the course, but this will be a very enjoyable class