

Math 30803 Section: 002	<b>Linear Algebra</b> MWF 10:45 – 11:35 SCEN 501	Spring 2025 Prof. Matthew Clay
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**Office:** SCEN 309

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**Phone:** 575-5195

**Preferred Contact Method:** Email – I will respond as soon as I can and within one full business day. Students are expected to monitor their UArk email address regularly and consult the course Blackboard site for important announcements.

**Office Hours:** Office hours will be held Tuesdays from 10:00 – 11:00, and Wednesdays and Fridays from 2:00 – 3:00, in-person, but you may request a virtual meeting. If you are unable to use these times, please make an appointment to see me. Office hours are times in my week that are devoted to helping students. Feel free to stop by unannounced and without a meeting to ask questions about the material, homework, quizzes, exams, or anything else related to the University.

**Prerequisites:** MATH 24004 (Calculus I) or MATH 22003 (Survey of Calculus) with a grade of C or better.

**Course Goals and Learning Objectives:** The primary goals of this course (and most courses in mathematics generally) is to further the development of your abilities to formulate and solve quantitative problems in mathematical terms, using appropriate tools and methods, and also strengthen your ability to communicate these findings and results. To this end, in this course, we investigate the techniques and tools of linear algebra, focusing on the computational aspects of the theory.

The specific topics we will discuss are:

- matrix computations
- determinants
- properties of set of vectors, e.g., linear independence, spanning
- representations of vectors and linear transformations in terms of a given basis
- using a matrix to represent a change of basis
- inner products
- eigenvalues and eigenvectors

**Text:** *Linear Algebra with Applications*, by Leon & de Pillis, 10th ed, 2020. We will cover the majority of chapters 1 through 6.

**Academic Honesty Policy:** Academic dishonesty will not be tolerated. As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University's "Academic Integrity Policy" which may be found at <https://honesty.uark.edu>. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

**Calculator Policy:** Calculators are not necessary for the course. Calculators and online resources (e.g., Chegg) will be not allowed during exams. Calculators and computers may be used for homework.

**Attendance:** Attendance is required in both the lecture. Attendance in lecture will be recorded via a written sign-in sheet. Up to *five* absences will be excused without the need to inform the instructor. Additional absences will be excused at the discretion of the instructor. Examples of absences that will be

considered excusable include those resulting from the following: 1) illness of the student, 2) serious illness or death of a member of the student's immediate family or other family crisis, 3) University-sponsored activities for which the student's attendance is required by virtue of scholarship or leadership/participation responsibilities, 4) religious observances, 5) jury duty or subpoena for court appearance, and 6) military duty. Documentation may be requested.

**Homework:** You will be expected to complete weekly homework assignments based on exercises in the textbook. Since learning is a process and you are not expected to master the material immediately, you may resubmit homework revisions for credit. To be eligible to submit a revision, the problem must have originally been attempted and turned in on time. Late homework will be accepted within one week of due date for partial credit.

Students are not allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT) on assignments in this course. Doing so will constitute academic dishonesty and will not be tolerated.

**Exams:** There are three exams scheduled during the semester (Friday, February 7, Wednesday, March 5, and Monday, April 7). There will be a comprehensive final exam covering material since the first day of class. The final exam will be 120 minutes long and will take place on Monday, May 5 from 10:15 AM – 12:15 PM. The policy for excused additional absences applies for missed exams.

**Class Etiquette:** Students and instructors each have an important role in maintaining a classroom environment optimal for learning, and are expected to treat each other with respect during class, using thoughtful dialogue, and keeping disruptive behaviors to a minimum. This applies both to working in groups and while listening to the instructor. Both students and faculty perceive abusive language directed towards others as the most disruptive behavior. Other behaviors that can be disruptive are chatting and whispering during class, the use of smartphones or laptops for texting or in other ways unrelated to the course, preparing to leave before class is over, and consistently arriving late to class. Inappropriate behavior in the classroom may result in a request to immediately leave the classroom and/or a referral to the Office of Academic Integrity and Student Conduct.

Cell phones or any device that may distract from the class should be silenced before class begins unless instructed otherwise and may not be on the desk during class. Tablet and laptop computers may be used for the purpose of note taking.

#### Course Grade:

- Attendance - 5%
- Homework - 35%
- Exam 1 (Friday, February 7) - 14%
- Exam 2 (Wednesday, March 5) - 14%
- Exam 3 (Monday, April 7) - 14%
- Final Exam (Monday, May 5) - 18%

Letter grades: *A* : 100 – 90; *B* : 89.99 – 80; *C* : 79.99 – 70; *D* : 69.99 – 60; *F* : 59.99 – 0

The instructor is committed to keeping students informed of their standing in the class. Scores on all graded items will be posted in a timely manner. Students are expected to bring any possible errors to the attention of the instructor within one week of posting. This maintains an accurate grade record throughout the semester. *All scores posted on or before Reading Day will be deemed accurate unless a possible error is brought to the attention of the instructor before the scheduled final exam.*

### Important Dates

Monday, January 13	Classes start
Monday, January 20	MLK Jr day
Monday, January 27	Last day to drop without W
Friday, February 7	Exam 1
Wednesday, March 5	Exam 2
Monday, March 24 – Friday, March 28	Spring Break
Monday, April 7	Exam 3
Friday, April 18	Last day to drop with W
Thursday, May 1	Last day of classes
Friday, May 2	Reading Day
Monday, May 5	Final Exam (10:15 AM – 12:15 PM)

*For the complete academic calendar, see:*

<https://registrar.uark.edu/academic-dates/academic-semester-calendar/>

*For the complete final exam schedule, see:*

<https://registrar.uark.edu/registration/final-exam-schedule/>

**Intellectual Property:** Notes, review material, exams, quizzes, videos or other learning material used in this class are the intellectual property of the instructor. Selling or freely sharing this content in electronic or written form is a violation of intellectual property rights and also constitutes a violation of the University's academic integrity policy. Your continued enrollment in this class signifies your understanding of and your intent to abide by this policy. There are severe consequences for sharing class content online.

**Accommodations:** Under University policy and federal and state law, students with documented disabilities are entitled to reasonable accommodations to ensure the student has an equal opportunity to perform in class. If any member of the class has such a disability and needs special academic accommodations, please report to the Center for Educational Access (CEA). Reasonable accommodations may be arranged after the CEA has verified your disability. Students who are registered with the Center for Educational Access must meet with the instructor by the end of the first week of class, or within one week of registering with CEA to discuss their accommodations. This must be done before you utilize your accommodations. Do not hesitate to contact me if any assistance is needed in this process.

**Inclement Weather Policy:** Class will meet in-person as scheduled unless the University is closed. On-campus students are expected to be present. Off-campus students should make their own decisions in the best interest of personal safety. Off-campus students will not be penalized for being absent on those days the Fayetteville Public Schools are closed due to weather. If attendance is severely affected by weather, deadlines and exam dates may be adjusted. Please do not call the Department of Mathematical Sciences with weather-related inquiries. You may contact me for information.

The University policy for inclement weather is available at: <https://safety.uark.edu/inclement-weather/>

### Class Cancellation Policy and Procedures:

*Class cancellation by the University due to inclement weather-related delay/closure:* In the event of an inclement weather delay, early dismissal, or closure, your instructor may conduct class through synchronous distance instruction (i.e., remote instruction) at the scheduled class time while the campus is closed for

inclement weather but will not require a student to attend synchronously. Any class taught remotely while the campus is closed for inclement weather will be recorded and made available to all students in the class in the approved campus Learning Management System. Your instructor will provide students the opportunity to make up work due while the University is closed for inclement weather without penalty. If remote instruction is not used, the instructor will cancel class meetings altogether. Instead, alternative learning materials and assignments will be supplied, to make up the missing class days.

*Faculty absence due to medical or other emergency:* Every effort will be made to arrange for a substitute if your instructor must take an emergency leave. If a substitute cannot be arranged, then your instructor may choose to teach classes remotely when they are able to do so, subject to appropriate university policies on remote instruction. If your instructor cancels class in case of an emergency (allowed per university policy <https://provost.uark.edu/policies/185810.php>), then your instructor will make up missed class time using recorded lectures, assignments, readings, instructional materials, or other alternative forms of instruction. Your instructor will send announcements promptly via email and posted to Blackboard. Each student will also get the opportunity to make up work that is due if class is impacted by an emergency.

**Disclaimer:** Information on this syllabus is subject to change. Any change will be announced in lecture and announced on Blackboard.