

Instructor: Derek Tomlin. **Email:** dtomlin "at" uta.edu. Phone: 817- 272-0942

Class Meeting Place/Time: PKH 103 Tuesday/Thursday 6:00-7:50 p.m.

Office Hours: Pickard Hall Room 420. Tu/Th 4:45-5:45 pm and Wed 2:45-3:45 pm, or by appointment.

Instructor Website: <https://www.uta.edu/profiles/derek%20tomlin>

Textbook: Linear Algebra with Applications, 5th Ed, O. Bretscher, Prentice Hall.

Prerequisite: A, B or C in Calculus I; Calculus II strongly encouraged.

Attendance: Attendance will be recorded and it will factor into students' grades (see 'weighting' below). You are responsible for any, and all, announcements made in class and on the course website. You are responsible for any, and all, material missed during lecture. If you miss a lecture, you can figure out the material covered by checking the homework assignment for that day. Note that the U.S. Department of Education requires that UTA have a mechanism in place to mark when Federal Student Aid recipients begin attendance in a course. UTA instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date the student attended their class; this date is reported to the Department of Education for federal financial aid recipients.

Tests: Quiz – Thurs, Jun 15 (15 minutes) = 0%; Test 1 – Thurs, Jun 22 (25 minutes) = 14%; Test 2 – Thurs, Jul 13 (35 minutes) = 20%; Test 3 – Thurs, Aug 3 (75 minutes) = 30%; Final Exam – Tues, Aug 15 (6-7:50 pm) = 36%.

Conflict with Test Dates: Students who miss tests due to UNauthorized reasons will NOT be accommodated. Your personal commitments (e.g., job) must accommodate the test dates/times. If you have a conflict with a test, or if you miss a test, you should contact the instructor as soon as possible (in person or by e-mail). If you miss any test for an authorized reason which can be verified with official documentation (e.g., hospitalization), then accommodations will be offered (no make-up tests). Any student who does not earn a nonzero score on the Final Test for this class will not pass this class.

Weighting: Each tests may be "curved" independently. If you have a nonzero score for Tests 1-3, and if your Final Exam score is higher than your lowest score from Tests 1-3, then your Final Test score will replace your lowest score. Good attendance and participation will help scores that are borderline.

Important Dates: June 22 = Census Date , July 4 = Independence Day Holiday (no class), July 20 = Last day to drop class, Aug 10 = Our last class.

Test dates: June 22, July 13, August 3, August 15.

Student learning outcomes: Upon completion of this course, students should be able to do the following:

- solve systems of linear equations without the aid of a calculator and interpret the results geometrically;
- give the geometric meaning of linear transformations and express them in different coordinate systems;
- calculate the kernel, range, determinant, eigenvectors and eigenvalues of a linear map;
- identify a basis of a vector space;
- solve problems involving orthogonal projection and orthonormal bases.

Additionally, students should be able to justify and explain their steps in problem solving; in particular, students should be able to construct correct and detailed mathematical arguments to justify their claimed solutions to problems.

Any student planning a career that uses differential equations (e.g., all flavors of engineering) or geometry (e.g., computer science) or data analysis (e.g., financial mathematics) or higher-order thinking skills (e.g., cryptology or geology) will use linear algebra; it is ubiquitous in the sciences. Your future classes in your major will focus on applications; this class will focus on the mathematics.

Course Schedule: There are 24 sections to cover and 20 class meeting dates. We also have three tests. I expect to cover at least one section a day. Students are encouraged to read the section *before* we go over it in class. You might be surprised to see how much this helps you follow along and understand it in lecture! The following schedule is *tentative*, and I reserve the right to adjust it as I see fit as we progress through the term:

6/6	Syllabus & §1.1
6/8	§1.2 & 1.3
6/13	§2.1 & 2.2
6/15	§2.2 & Quiz (last 15 minutes)
6/20	§2.3 & 2.4
6/22	§3.1 & Test 1 (last 25 minutes)
6/27	§3.2 & 3.3
6/29	§3.3 & 3.4
7/4	No Class!
7/6	§4.1
7/11	§4.2 & 4.3
7/13	§5.1 & Test 2 (last 35 minutes)
7/18	§5.3 & 6.1
7/20	§6.1 & 6.2
7/25	§6.3 & 7.1
7/27	§7.2 & 7.3
8/1	§7.4
8/3	Test 3 (last 75 minutes)
8/8	§8.1
8/10	Review
8/15	Final Exam!

Homework: The homework will be posted on blackboard. It will not be collected, however it is crucial for you do the exercises in order to learn the material and succeed on the tests. It is your brain exercise. The tests will be designed to determine whether you have achieved mastery of the ideas in the homework and in the lectures. Any questions you have regarding the homework can be asked during class, in my office hours, or via email. Students are encouraged to work on the homework together, but write their solutions independently. There will also be reading assigned, due to the volume of material we are to cover.

Calculators: No calculators will be allowed on the tests, so it is advised to not use one for the homework.

Expectations for Out-of-Class Study: beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least 9 hours/week outside class in course-related activities, including reading materials, completing assignments, preparing for tests, etc. The best way to guarantee a good grade in this course is to take good lecture notes and to read them over after class before starting the homework, and to do ALL the assignments on a regular basis and to discuss the material with each other. After completing any one assignment, put together a list of the ideas you learned in doing that assignment; keep your list to help in studying for the tests. It is very important that you know how to work out the homework problems correctly. If you use a solutions manual, be sure to use it in a way that helps you understand and remember the concepts and arguments.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through

the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>). Any student who drops this course on or before Thursday, June 22 at 4 PM will receive a W.

Americans with Disabilities Act: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA), and Section 504 of the Rehabilitation Act. All instructors at UT Arlington are required by law to provide reasonable accommodations to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the Office for Students with Disabilities (OSD). Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting either of the following: The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364, or Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364. If you require an accommodation based on disability, I would like to meet with you in the privacy of my office, during the first week of the semester, to make sure you are appropriately accommodated.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, i.e., turn right and head to the exit door down the hall on the right. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. During a tornado warning siren, students are advised to congregate in PKH 110 (turn left out of our classroom), or in a classroom near PKH 110 without a window. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlingtons tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents Rule 50101, 2.2, suspected violations of university standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the students suspension or expulsion from the University.

In-Class Behavior: During all classes AND tests, cellular phones should be SWITCHED OFF and any electronic device not used for learning the class material should be out of sight. UTA reserves the right to impose disciplinary action for any kind of infraction of UTA policies. Engagement in conduct that disrupts, obstructs or interferes with activities authorized by UTA will result in disciplinary action against the perpetrator(s). Such conduct includes (but is not limited to) leaving and returning to the room frequently during class (even for restroom breaks), refusing to put one's belongings by the wall when asked to do so, the use of a cellular phone, ringing cellular phones, etc.

Counseling: Counseling and psychological services are available to all students by calling 817-272-3671; see www.uta.edu/caps/ .

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with stu-

dents about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows licensed individuals to carry a concealed handgun in buildings at UTA, except in locations UTA has established as prohibited. Under the new law, openly carrying handguns is not allowed at UTA. For more information, visit <http://www.uta.edu/news/info/campus-carry/>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>

Title IX: The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit www.uta.edu/titleIX.

Non-Discrimination Policy: UTA does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.

Writing Center: The Writing Center, 411 Central Library, offers individual 40-minute sessions to review assignments, Quick Hits (5-10 minute quick answers to questions), and workshops on grammar and specific writing projects. Visit <https://uta.mywconline.com> to register and make appointments. For hours & other information visit www.uta.edu/owl/.