Syllabus for Math 3330 - 001 Introduction to Linear Algebra M/W/F, 10:00a-10:50a, PKH 102

Spring 2016

Instructor: Andrew Cavaness Intsructors Email: cavaness@uta.edu Office: 420 PKH Office Hours: 2:30 - 3:30 pm M/W Phone: (Math office) 817-272-3261

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

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

Calculators: No calculator is allowed on any test, so you are advised not to use one on the homework.

Exams: The following schedule is subject to change; however, the students will be given at least a week's notice if the following dates change.

Grade Distribution:

Quizzes	15~%	Non Midterm Fridays	
Midterm 1	20%	February 12	1.1 - 2.2
Midterm 2	20%	March 11	2.3 - 3.4
Midterm 3	20%	April 15	4.1 - 6.1
Final Exam	25%	May 9, 8:00 am - 10:30 am	6.2 - 7.3

Midterms and Final Exam: Each midterm is offered during normal class time, and the final exam is comprehensive. All tests will have a mix of multiple-choice, true/false, and show-work questions. Your final exam may replace your lowest **positive** midterm score; however, midterms resulting in a zero due to absence or poor testing will not be replaced.

Missed Test Policy: There are no make-up exams for missed tests. Under extreme circumstances or a university sanctioned event, students missing an exam for an "approved reason" with documentation will be

accommodated. Failure to communicate with me within 24 hours of the missed exam may result in a score of 0 for that exam (this score cannot be replaced by the final exam grade).

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I choose to record attendance. You are responsible for any, and all, announcements made in class and on blackboard. You are responsible for any, and all, material missed during lecture. If you miss a lecture, you should figure out the material covered by both checking the homework assignment for that day and by asking a classmate. An excellent attendance will affect the student in a postive manner - if the student has a "borderline" grade average at the end of the course, that student will receive the next letter grade.

Homework: The homework will not be collected, but is assigned to help you learn the material and prepare for the tests. It is your brain exercise. The tests will be designed to determine whether you have mastered the ideas in the homework and in the lectures. Indeed, the tests will be modeled on the homework questions. An extensive amount of reading may also be assigned, owing to the amount of material that we need to cover.

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, and 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.

Important Dates:

First Day of Classes	February 3
Census Date	September 14
Spring Break	March 14 - March 18
Last Day to Drop	April 1
Last Day of Class	May 6
Final Exam	May 9

Help Outside of Class: Feel free to ask the instructor relevant questions during class and right after class. You can also go to the instructor's office hours . You can also e-mail the instructor questions, or you can ask the instructor to look over your solution to a homework problem. No appointment is necessary for office hours.

The Math Clinic in PKH 325 is also available to help you, when they are open.

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. 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://wweb.uta.edu/aao/ fao/). Any student who drops this course on or before April 1 will receive a W. Note that requests must be submitted to an advisor by the end of business on April 1.

Student Support Services: In addition to the resources provided by this class, UTA 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 should either visit the reception desk at University College, or call the Maverick Resource Hotline at 817-272-6107, or send a message to resources@uta.edu, or view the information at http://www.uta.edu/resources . Also, a list of tutors is available from the Mathematics Department Office, but note that this list is not endorsed by the Mathematics Department.

The Math Department maintains a list of people who have expressed an interest in tutoring. These persons are not necessarily recommended by the Math Department and they set their own fees. You may obtain a copy of the tutor list in the Math Office, 478 PKH.

Disability Accommodations: 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 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: The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364. 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.

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/TIX.

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 universitys 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.

Student Disruption: The University reserves the right to impose disciplinary action for an infraction of University policies. For example, engagement in conduct, alone or with others, intended to obstruct, disrupt, or interfere with, or which in fact obstructs, disrupts, or interferes with, any function or activity sponsored, authorized by or participated in by the University.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students 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 students feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlingtons 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.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building due to a fire drill:

Students should exit the classroom through the stage-left door and proceed to the building exit.

Should we experience an emergency due to a tornado drill, the student should exit the classroom through the stage-right door and enter PKH 104, the classroom directly across from PKH 102.

When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals. Grade Replacement and Grade Exclusion Policy: These policies are described in detail in the University catalog and can also be founded online at http://wweb.uta.edu/catalog/content/general/academic_regulations.aspx#10 (Scroll about half way down the page).

Drop for Nonpayment of Tuition: If you are dropped from this class for non-payment of tuition, you may secure an Enrollment Loan through the Bursar's Office.

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.

Course Schedule: The next page outlines a tentative schedule for this course along with the assignment sheet.

As the instructor of this course, I reserve the right to adjust this schedule as needed in any way that serves the educational needs of the students enrolled in this course. -Andrew Cavaness-

The weekly coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Week	Content	Homework
Jan. 20 - Jan. 22	1.1	2, 11 13, 16, 17, 19, 22, 26, 31, 33, 38, 45, 46, 50
	Quiz 1	1.1
Jan. 25 - Jan. 29	1.2	1 -4, 6, 8, 18, 21, 26, 27, 31, 43, 47, 48, 63
	1.3	1 7, 9 20, 25, 27, 28, 34, 36, 57 - 59
	Quiz 2	1.2 - 1.3
Feb. 1 - Feb. 5	2.1	$1 \ 6, 8 \ 12, 14, 15, 17, 35, 57$
	2.2	1, 2, 8 11, 26(a), 27, 30
	Quiz 3	2.1
Feb. 8 - Feb. 12	2.2	
	Review	
	Midterm 1	1.1 - 2.2
Feb. 15 - Feb. 19	2.3	1 5, 7, 10, 11, 35, 43, 44, 20, 22, 26, 57, 58, 61
	2.4	1, 2, 5, 6, 10, 13, 16, 17, 19, 29, 30, 35, 37, 40
	Quiz 4	2.3 - 2.4
Feb. 22 - Feb. 26	3.1	1 8, 12, 14 17, 19, 22, 30, 32 34, 44
	3.2	$1 \ 3, 5, 8 \ 16, 21, 24, 27, 28, 34, 48, 49$
	Quiz 5	3.1
Feb. 29 - Mar. 4	3.3	12, 13, 16, 17, 19 21, 26, 28, 29, 30, 36, 38, 39, 82, 83
	3.4	3, 7, 12, 16, 17, 19, 21, 27, 43, 45, 48, 59, 60
	Quiz 6	3.2 - 3.3
Mar. 7 - Mar. 11	Review	
	Midterm 2	2.3 - 3.4
Mar. 14 - Mar. 18	Spring Break	
Mar. 21 - Mar. 25	4.1	$1 4, \ 7, \ 8, \ 20 22, \ 25, \ 26, \ 29, \ 30, \ 33$
	4.2	1, 3, 7, 9, 11, 17, 19, 22, 23, 42 44, 60
	Quiz 7	4.1
Mar. 28 - Apr. 1	4.3	15, 16, 21, 23, 24, 29, 32, 33, 46, 48, 57, 60(a)(b), 61(b)
	5.1	$1 \ 3, 10, 15 \ 17, 29$
	5.2	1, 5, 7, 33, 55
	Quiz 8	4.2 - 4.3
Apr. 4 - Apr. 8	5.3	$1 9, \ 13 18, \ 21 24, \ 35 38, \ 52, \ 57, \ 61$
	6.1	1, 2, 5, 6, 9, 10, 12, 14, 15, 17, 19, 21, 22, 25, 29, 32 34, 45
	Quiz 9	5.1 - 6.1
Apr. 11 - Apr. 15	Review	
	Midterm 3	4.1 - 6.1
Apr. 18 - Apr. 22	6.2	$1, 5, 6, 11 \ 17, 27, 35, 38 \ 40, 45, 46$
	6.3	22 24, 31, 33
	Quiz 10	6.2 - 6.3
Apr. 25 - Apr. 29	7.1	$1 \ 5, 8, 9, 13, 24 \ 29, 34, 38, 46, 47, 51, 67, 69$
	7.2	$9 \ 12, 15, 29, 32, 45$
	Quiz 11	7.1
May 2 - May 6	7.3	$5, 6, 9, \overline{10, 13, 15, 17, 18, 35, 36}$
	Quiz 12	7.2 - 7.3
	Review	
May 9	Final Exam	6.2 - 7.3