

# MATH 2318 Linear Algebra Syllabus for Fall 2016

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*Time:* MW 3:05pm-4:20pm

*Classroom:* Monday: MAGC 1.206, Wednesday: ACSB 2.110

## Instructor

*Name:* Dr. Sergey Grigorian

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*Office hours:* Monday and Wednesday 4:30pm-5:50pm in MAGC 3.426, or by appointment

*Textbook:* *Linear Algebra with Applications*, 1<sup>st</sup> Edition by Jeffrey Holt, W. H. Freeman, ISBN #: 0716786672. The book is recommended, but not required.

You are required to purchase access to [WebAssign](#) for online homework and in-class assignments. You will get 14 days of free access, and afterwards you will have to purchase an access code. It costs \$51 for the semester. For an extra \$25 you also get access to the e-book. So it is really worth it. If you really need a hard copy of the book as well, I suggest you are either rent it, or get a used copy. Otherwise, it is very expensive.

To register for WebAssign, use the following class key: **utrgv 2023 5683**

*Prerequisites:* MATH 2413 (Calculus I) is required with a grade C or better.

*Course Description:* Topics include systems of linear equations, matrices and their algebraic properties, determinants, vectors, Euclidean  $n$ -space, linear transformations and their matrix representations, vector spaces, eigenvalues and eigenvectors, and applications to the sciences and business. Use of mathematical technology will be incorporated throughout the course.

*Student Learning Outcomes:* After completing this course students will

1. Solve linear systems using matrices and Gaussian elimination, understand the different types of solutions that are possible, and use these ideas in applied problems.
2. Perform the common operations of matrix algebra and use them to solve applied problems.
3. Compute the determinant of a square matrix and understand its properties.
4. Understand the ideas of linear independence, spanning set, basis, and change of basis of a linear transformation, rank of a matrix, vector space, subspace, and their application to applied problems.
5. Understand eigenvectors and eigenvalues, how they characterize the action of some linear transformations, and how to use them to solve applied problems.

- (Optional) Use the ideas of inner products, orthogonality, and projections to determine least squares solutions to a linear system and perform Gram-Schmidt orthogonalization on a set of vectors.

*Calculators:* A calculator is **not** required for the course.

*Homework:* There will be regular homework assignments in *WebAssign*. Overall, the homework will contribute 20% of the final grade.

*Exams and grading:* There will be 3 in-class exams, each worth 14% of the overall grade, and a comprehensive final exam worth 28% of the overall grade. The final exam will be held on Wednesday, Dec 14 at 1:15-3:00 pm.

	<i>% of the Final Grade</i>
<i>Homework</i>	20%
<i>In-class exams</i>	42%
<i>Attendance and in-class work</i>	10%
<i>Final exam</i>	28%

*Make-ups:* **THERE WILL BE NO MAKE-UP EXAM GIVEN.**

If a student is absent during a scheduled exam, the student must first contact the instructor to explain the excuse. In the case of a valid excuse, the missed test grade will be replaced by the final exam grade. If a student does not have a valid excuse, the grade for the missed test is a zero and cannot be replaced. If you arrive late to a test you will not be given additional time to complete the exam. Anyone arriving to a test after somebody else who took the exam has left will not be allowed to take the exam. Students missing more than one exam may be dropped from the course. With an unexcused absence, a score of 0 will be recorded for the missed exam.

*Attendance policy:* Attendance is **mandatory**; arriving 15 minutes late is considered an absence. If three or more absences have accumulated, the instructor has the right to drop the student from class in accordance with policies set by the University of Texas-Pan American. It is strongly advised to attend each lecture. If you do miss a class, it is your **responsibility** to determine what class work and notes were missed and make arrangements to comply with all missed assignments by yourself. On the **third absence**, the student will receive an automatic **F**, unless approved by the instructor. Students arriving late or leaving early without prior arrangements may be recorded absent for the day.

*Drop Policies:* **A student may drop the course at any time before the final exam. A student wishing to drop the course must submit and sign a DROP FORM.** The forms can be obtained at the Registrar's Office or at the Department's Secretary Offices. Remember that it is the responsibility of the student to follow the procedure in the university catalog for dropping a course.

### *Classroom Behavior:*

- All cell phones must be turned off and put away before you enter the classroom. No cell phone use allowed in class.
- Once in class, a student is expected to remain in class for the duration of the class. If a student needs to leave class early, then the student needs to discuss the situation with the instructor before class begins.
- During class students are expected to be courteous to the instructor and other classmates. Examples of discourteous behavior are unnecessary talking, sleeping, tardiness, leaving class while instructor is lecturing, sharpening pencils during the lecture, etc.
- No food allowed in the classroom.
- Chronic tardiness and discourteous behavior will not be tolerated and is cause for a student's dismissal from class for the remainder of the semester.

### *Calendar of Activities*

The UTRGV academic calendar can be found at <http://my.utrgv.edu> at the bottom of the screen, prior to login. Some important dates for Fall 2016 include:

Aug 29	Fall classes begin
Sept 1	Last day to add or register for Fall classes
Sept 2	Last day to withdraw (drop all classes) for a 80% refund
Sept 5	Labor Day Holiday, <b>no classes</b>
Sept 14	Census day (last day to drop without it appearing on the transcript)
Nov 17	Last day to drop (DR grade) a class or withdraw (grade of W)
Nov 18 - Dec 8	Online course evaluations available
Nov 24 - Nov 25	Thanksgiving Holiday, <b>no classes</b>
Dec 8	Study Day, <b>no classes</b>
Dec 14	Final Exam

*Special Accommodations:* If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus:** Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at [accessibility@utrgv.edu](mailto:accessibility@utrgv.edu). **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at [accessibility@utrgv.edu](mailto:accessibility@utrgv.edu).

*Mandatory Course Evaluations Period* Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (<http://my.utrgv.edu>); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available:

Oct 5 – Oct 12 for Module 1 courses

Dec 1 – Dec 7 for Module 2 courses

Nov 18 – Dec 8 for full fall semester courses

*Scholastic Integrity* As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

*Sexual Harassment, Discrimination, and Violence:* In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at [www.utrgv.edu/equity](http://www.utrgv.edu/equity), including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

*Course Drops:* According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.