

MATH 3323**Syllabus****Fall 2020**

MATH 3323

Asynchronous with live sessions on TR 11-11:50 am

ONLINE

Instructor: Julio César Urenda CastañedaOffice: [MS Teams](#): [Office](#)

Hours: MW 9:00am-10:20am or by appointment

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Teaching Assistant: TBA

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email: TBA@miners.utep.edu**Online Course Access Points**Announcements: [Piazza](#)Homework and Quizzes: [Gradescope](#)Live Sessions [Blackboard](#)→[Virtual Room](#)→[BCUltra](#)→[Matrix Algebra \[ML-PS\]](#)**Prerequisites:** Calculus II (MATH 1312). This is a mathematical maturity requirement.

Course Objectives: This course is concerned with matrices and vectors. In one setting, matrices and vectors merely serve as efficient devices for storing the coefficients and solutions of systems of linear equations. The solutions of many such systems, though, are hard to even describe without the right language. This is the language of vector spaces, where matrices serve as functions turning vectors into other vectors. We will then spend most of our time examining vector spaces, and especially various vector spaces we can naturally assign to a matrix. In this setting, eigenvalues and eigenvectors of a matrix arise naturally, and we end the course examining these. Upon successful completion of this course, you will be able to solve and analyze systems of linear equations. You will be able to find and describe the various vector spaces associated to a matrix, and you will be prepared to study more abstract vector spaces. You will be able to compute eigenvalues and eigenvectors of a matrix, and know what they are good for. You will be able to do all of this equally well with the symbolic/numerical description of matrices and vectors as arrays of numbers, and with the geometrical description of matrices and vectors, using the powerful organizing concept of dimension, even in dimensions higher than 3.

Textbook: Introduction to Linear Algebra, 5th ed., Johnson, Riess, Arnold, Chapters 1-4. We will skip some sections, as announced in class. The textbook is required at all class meetings.

Required Reading: Read each section that we cover in class, both before and after class. Skim the section before class, even if you do not understand it fully, to have some idea of what we'll be doing in class. Read it more carefully after class to clarify and fill in details you missed in class.

Warning: Sometimes, we will not “cover” all the material from a section in class, but instead focus on a particular aspect of the section. In such cases, I will point out in class which other parts of the section I expect you to read on your own.

Grading We use an additive grading criterion: every assignment contains an fixed number of points, your final grade is determined by the fraction of the points you obtain over the maximum number of points available. Thus, to determine your current standing in the class, add up the points you get and divide them by the current maximum number of points. We apply the standard letter grade system based on this fraction g

- A if $0.9 \leq g \leq 1.0$
- B if $0.8 \leq g < 0.9$
- C if $0.7 \leq g < 0.8$
- D if $0.6 \leq g < 0.7$
- F otherwise

Quizzes, Homework, and Participation Suggested homework problems will be assigned most class days and will generally be discussed at the next class. There will be approximately 12 quizzes, with problems taken from the homework. Quizzes are mostly closed-book, closed-notes. Missed quizzes **cannot** be made up, but your two lowest quiz scores will be dropped. It is very important that you do your homework before it is

discussed in class. You will only learn the material by doing it yourself, not by watching others do it for you. Mathematics is not an spectator's game.

Partial Exams There will be three exams, exact dates will be announced in class. Makeup exams can be given only in extraordinary and unavoidable circumstances, and with advance notice.

Final The final comprehensive exam will be on

December 7th – 8th

Policies

Academic dishonesty: It is UTEP's policy, and mine, for all suspected cases or acts of alleged scholastic dishonesty to be referred to the Office of Student Conduct and Conflict Resolution for investigation and appropriate disposition. See Section II.1.2.2 of the Handbook of Operating Procedures.

COVID-19 Accommodations: Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations. (classes with on-campus meetings) Students who are considered high risk according to CDC guidelines and/or those who live with individuals who are considered high risk may contact Center for Accommodations and Support Services (CASS) to discuss temporary accommodations for on-campus courses and activities.

NETIQUETTE As we know, sometimes communication online can be challenging. It's possible to miscommunicate what we mean or to misunderstand what our classmates mean given the lack of body language and immediate feedback. Therefore, please keep these netiquette (network etiquette) guidelines in mind. Failure to observe them may result in disciplinary action.

- Always consider audience. This is a college-level course; therefore, all communication should reflect polite consideration of other's ideas.
- Respect and courtesy must be provided to classmates and to the instructor at all times. No harassment or inappropriate postings will be tolerated.
- When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation.
- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space.

Attendance: You are strongly encouraged to attend class every day. I expect you to arrive for class on time and to remain seated until the class is dismissed. Students who have demonstrated lack of effort will be dropped from the course with a grade of "F". You are responsible to find out any assignment that must be made up if you get behind. My goal is for class meetings and activities to complement, rather than to echo, the textbook, and thus for every class to be worth attending.

Drop date: The deadline for student-initiated drops with a W is **Friday, October 30th**. After this date, you can only drop with the Dean's approval, which is granted only under extenuating circumstances. I hope everyone will complete the course successfully, but if you are having doubts about your progress, I will be happy to discuss your standing in the course to help you decide whether or not to drop. You are only allowed three enrollments in this course, and students enrolled after Fall 2007 are only allowed six withdrawals in their entire academic career, so please exercise the drop option judiciously.

Courtesy: We all have to show courtesy to each other, and the class as a whole, during class time. Please arrive to class on time (or let me know when you have to be late, and why); do not engage in side conversations when one person (me, or another student) is talking to the whole class; turn off your cell phone (or, for emergencies, at least set it to not ring out loud), and do not engage in phone, email, or text conversations during class.

Disabilities: If you have, or suspect you have, a disability and need an accommodation, you should contact the Center for Accommodations and Support Services (CASS) at 747-5148, cass@utep.edu, or Union East room 106. You are responsible for presenting to me any CASS accommodation letters and instructions.

Exceptional circumstances: If you anticipate the possibility of missing large portions of class time, due to exceptional circumstances such as military service and/or training, or childbirth, please let me know as soon as possible.

Concept Map:

