



**MATH 6330-90L: Linear Algebra
SYLLABUS
Fall 2020**

COURSE INFORMATION:

Meeting times: N/A

Course Modality: Online Asynchronous Courses (OASYNC)

INSTRUCTOR INFORMATION:

Instructor Name: Jasang Yoon

Phone: (956) 665-3633

E-Mail: Jasang.yoon@utrgv.edu

Office location: MAGC 3.110

Office hours: TR 7:00pm-8:00pm

WELCOME & INTRODUCTION TO COURSE MODALITY STATEMENT

Each of the possible modalities are defined below. Select the one that corresponds to this course and delete the rest. In order to maintain consistency across all communication resources regarding Fall 2020 changes, **please do not modify the definition**. An explanation will be included with the course description.

Online Asynchronous Courses: These courses will be delivered fully online. There will be no designated class meeting time for real-time instructor/student interaction, which gives you the flexibility to engage with the course materials as best fits your daily schedule. Your learning will be guided by the digital presentation of the course content (e.g., recorded lectures, presentations, outlines, notes) and scheduled assignments. Your instructors will provide you with feedback on assigned work, communicate with you electronically, and be available to meet as defined on this syllabus.

COURSE DESCRIPTION, PREREQUISITES & MODE OF LEARNING

COURSE DESCRIPTION: Topics include the proof-based theory of matrices, determinants, vector spaces, linear spaces, linear transformations and their matrix representations, linear systems, linear operators, eigenvalues and eigenvectors, invariant subspaces of operators, spectral decompositions, functions of operators and applications to science, industry and business.

PREREQUISITES: MATH 2318 (undergraduate) Linear Algebra with a grade of "C" or higher.

TECHNOLOGY REQUIREMENTS: Students are required to have reliable internet access for accessing Blackboard, WeBWork and for weekly Zoom video conferencing.

HOMEWORK: Online homework will be assigned regularly through the free online homework system WeBWork. You will find in Blackboard the link to WeBWork. Typically, each homework assignment will be due at 6 pm, exactly one week after it is assigned. Late homework will have an automatic 50% reduction from the original credit. Additional homework includes assignments in Blackboard. **There will be bi-weekly individual video conferences at the time of your choice where you have to present the solution to homework assignment and answer related questions.**

RECOMMENDED TEXTBOOKS: Linear Algebra in Action: Second Edition, by Harry Dym, 2013, A First Course in Linear Algebra (free book <http://linear.ups.edu/>) and Schaum's outlines Linear Algebra.

I will provide my own lecture note.

COVID-19 RESOURCES: Required on all syllabi. Do not modify.

Please visit the [UTRGV COVID-19 Website](https://www.utrgv.edu/coronavirus/index.htm) via the following link for the most up-to-date information and resources (<https://www.utrgv.edu/coronavirus/index.htm>). This includes information on self-screening questions, links to forms for travel and contact, etc.

Boilerplate language on self-screening and reporting is currently being developed.

Face Covering Protocol: Required on all syllabi. Do not modify.

As part of the university's ongoing COVID-19 mitigation efforts to maintain a healthy environment for all members of our campus community, anyone entering a campus building must wear a face covering that covers the mouth and nose. The covering must be worn in all hallways, public spaces, research labs, teaching/computer labs, libraries, classrooms, automobiles with a passenger, stairwells, elevators and common areas, as well as office spaces. In office spaces, when social distancing of 6 feet is possible and maintained, face coverings may be removed. Face coverings also are required in outdoor settings when safe social distancing and gathering practices are not possible.

LEARNING OBJECTIVES/OUTCOMES FOR THE COURSE

After completing this course students will be able to

1. Develop analytical skills to prove propositions, theorems of linear algebra, i.e., understand what constitutes a valid proof of results in linear algebra and learn how to create such proofs;
2. Understand the definitions, properties, and examples of vector spaces, subspaces, and their sums and direct sums;
3. Know the theory of linear maps, eigenvalues and eigenvectors, characteristic polynomials;
4. Understand inner-product spaces, norms, orthonormal bases, operators on inner-product spaces;
5. Learn spectral theory, singular value decomposition and applications of linear algebra;
6. Develop skills to use linear algebra in other related mathematical fields.

EDUCATIONAL OBJECTIVES FOR THE MASTER OF SCIENCE IN MATHEMATICS PROGRAM:

- to provide the applied mathematics content needed for a student to pursue a career in professional areas requiring advanced applied mathematics;
- to prepare students for advanced graduate study in applied mathematics.

ELECTRONIC COMMUNICATION POLICY: The new university policy requires all email communication between the University and students be conducted through the students' official University supplied Email account. Therefore, please use your UTRGV assigned email for any future correspondence with UTRGV faculty and staff.

GRADING POLICIES

EXAMINATIONS: There will be two midterm Zoom exams and two exams' project.

On all problems, you must show your work on your own. Write clearly and show all your work; a correct answer alone may not receive any credit. You are not allowed to collaborate on your exams.

GRADING POLICY: Two exams: 30% (15% each, **Zoom proctoring exams, Ex1 9/26/20, 2:00pm-3:30pm, Ex2 11/21/20, 2:00pm-3:30pm**); two exams project 30% (15% each), Homework: 20%; Bi-weekly presentations: 20%.

GRADING DISTRIBUTION: [90%, 100%]: A, [80%, 90%]: B, [70%, 80%): C, [0%, 70%): F

(If you're using Respondus Monitor in your course, include the following statement in your Syllabus and in Blackboard)

Notice:

Your enrollment in this course requires that you use Respondus Lockdown Browser and Respondus Monitor for online assessment proctoring. LockDown Browser is a custom browser that locks down the testing environment within Blackboard and replaces regular browsers such as Chrome, Firefox, and Safari. Respondus Monitor requires you to have

a webcam and microphone as it will record you while taking your assessment. **YOUR ACTIVITIES ARE RECORDED WHILE YOU ARE LOGGED INTO OR TAKING YOUR ASSESSMENT(S). THE RECORDINGS SERVE AS A PROCTOR AND WILL BE REVIEWED AND USED IN AN EFFORT TO MAINTAIN ACADEMIC INTEGRITY.**

You can find more detailed information on [Lockdown Browser and Monitor](#) at [UTRGV.edu/online](https://www.utrgv.edu/online).

BLACKBOARD SUPPORT

If you need assistance with course technology at any time, please contact the [Center for Online Learning and Teaching Technology](#) (COLTT).

Campus:	Brownsville	Edinburg
Location:	Casa Bella (BCASA) 613	Education Complex (EEDUC) 2.202
Phone:	956-882-6792	956-665-5327

Toll Free: 1-866-654-4555

Office Hours: Monday - Friday, 7:30 a.m. - 6:00 p.m.

Support Tickets Submit a Support Case via our [Ask COLTT Portal](#)

24/7 Blackboard Support

Need Blackboard assistance after hours? You can call our main office numbers, 956-882-6792 or 956-665-5327, to speak with a support representative.

ATTENDANCE: Recommended on all syllabi; may be modified by the instructor as long as it is consistent with UTRGV policy.

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; have been provided such an accommodation by Student Accessibility Services (SAS); for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

ABSENCE/SICK POLICY: See recording of instruction option below or identify other means students can participate if unable to attend class at the designated time.

When setting your attendance policy for the fall semester, please consider COVID-19-related extenuating circumstances. For instance, you may encounter students who cannot attend class at the scheduled time of a face-to-face, hybrid or synchronous course because they answer "Yes" to any of the COVID screening questions, they need to self-isolate because of exposure, or they become sick with COVID and are unable to complete assignments or exams by the original due date. It will be important to consider how you will accommodate students in these and similar situations and share your approach with students in the syllabus. Based on the student reporting protocol (to be shared separately), the student will be able to provide you documentation from the UTRGV COVID-19 response team.

Makeup Work: Additionally, if work can be made up, what mechanisms have you set up to help students keep up with coursework in the event they have to miss class? Will you have recordings of all class meetings available? Will on-line quizzes/examinations be available?

Should you elect to record your instruction, sample syllabus language is included here:

The use of recordings will enable you to have access to class lectures, group discussions, etc. in the event you have to miss a synchronous or face to face class meeting due to illness or other extenuating

*circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA), UTRGV's acceptable-use policy, and UTRGV HOP Policy STU 02-100 Student Conduct and Discipline. A recording of class sessions will be kept and stored by UTRGV, in accordance with FERPA and UTRGV policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. **You may not share recordings outside of this course.** Doing so may result in disciplinary action under UTRGV HOP Policy STU 02-100 Student Conduct and Discipline.*

ACADEMIC INTEGRITY: Recommended on all syllabi.

Members of the UTRGV community uphold the [Vaquero Honor Code](#)'s shared values of honesty, integrity and mutual respect in our interactions and relationships. In this regard, academic integrity is fundamental in our actions, as any act of dishonesty conflicts as much with academic achievement as with the values of honesty and integrity. Violations of academic integrity include, but are not limited to: cheating, plagiarism (including self-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 (Board of Regents Rules and Regulations, STU 02-100, and UTRGV Academic Integrity Guidelines). **All violations of Academic Integrity will be reported to Student Rights and Responsibilities through [Vaqueros Report It](#).**

UTRGV POLICY STATEMENTS

The UTRGV disability accommodation, mandatory course evaluation statement and sexual misconduct statement are required on all syllabi. Additional policy statements are optional, such as those covering attendance, academic integrity, and course drop policies.

Other Course Information

In this section, please provide any other information that is pertinent to your course and your expectations for students.

STUDENTS WITH DISABILITIES: Required on all syllabi. Do not modify.

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive reasonable academic accommodations should contact **Student Accessibility Services (SAS)** for additional information. In order for accommodation requests to be considered for approval, the student must apply using the mySAS portal located at www.utrgv.edu/mySAS and is responsible for providing sufficient documentation of the disability to SAS. Students are required to participate in an interactive discussion, or an intake appointment, with SAS staff. Accommodations may be requested at any time but are not retroactive, meaning they are valid once approved by SAS. Please contact SAS early in the semester/module for guidance. Students who experience a broken bone, severe injury, or undergo surgery may also be eligible for temporary accommodations.

Pregnancy, Pregnancy-related, and Parenting Accommodations

Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to apply to **Student Accessibility Services** using the following link: [Pregnancy Accommodations Request Form](https://www.utrgv.edu/pregnancy)
<https://www.utrgv.edu/pregnancy>

Student Accessibility Services:

Brownsville Campus: Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at ability@utrgv.edu.

Edinburg Campus: Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD: Required on all syllabi. Do not modify.

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 on or about:

Module 1	October 7-13, 2020
Module 2	December 2-8, 2020
Full Fall Semester	November 13 – December 2, 2020

SEXUAL MISCONDUCT and MANDATORY REPORTING: Required on all syllabi. Do not modify.

In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity (OIED@utrgv.edu) any instance, occurring during a student’s time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and 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, 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 that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at (956) 665-8287, (956) 882-8282, or OVAVP@utrgv.edu.

COURSE DROPS: Recommended on all syllabi; may be modified by the instructor as long as it is not inconsistent with UTRGV policy.

According to UTRGV policy, students may drop any class without penalty earning a grade of DR (drop) 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.

STUDENT SERVICES: Recommended on all syllabi.

Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Student Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor’s office hours. University Resources include the Advising Center, Career Center, Counseling Center, Learning Center, and Writing Center. The centers provide services such as tutoring, writing help, counseling services, critical thinking, study skills, degree planning, and student employment. In addition, services such as the Food Pantry are also provided. Locations are listed below.

Center Name	Brownsville Campus	Edinburg Campus
Advising Center AcademicAdvising@utrgv.edu	BMAIN 1.400 (956) 665-7120	ESWKH 101A (956) 665-7120

Center Name	Brownsville Campus	Edinburg Campus
Career Center CareerCenter@utrgv.edu	BINAB 1.105 (956) 882-5627	ESSBL 2.101 (956) 665-2243
Counseling Center Counseling@utrgv.edu Counseling and Related Services List	BSTUN 2.10 (956) 882-3897	EUCTR 109 (956) 665-2574
Food Pantry FoodPantry@utrgv.edu	BCAVL 101 & 102 (956) 882-7126	EUCTR 114 (956) 665-3663
Learning Center LearningCenter@utrgv.edu	BMSLC 2.118 (956) 882-8208	ELCTR 100 (956) 665-2585
Writing Center WC@utrgv.edu	BUBLB 3.206 (956) 882-7065	ESTAC 3.119 (956) 665-2538

CALENDAR OF ACTIVITIES: Required on all syllabi. To be completed by the instructor.

Include in this section a table or list that provides a general description of the subject matter of each lecture or discussion.

Day	Topic	Assignments
After watch and study two lecture notes and videos	Contents in lecture notes and videos	5-7 questions from notes through WeBwork or Blackboard (the HW is due at 6 pm, exactly one week after it is assigned)

Be sure to include important dates relative to the academic calendar. The UTRGV academic calendar can be found at <https://my.utrgv.edu/home> at the bottom of the screen, *prior to login*. Some important dates for Fall 2020 include:

Aug. 24	First day of classes
Aug. 27	Last day to add a class or register for Fall 2020 classes
Sept. 7	Labor Day – NO classes
Nov. 11	Last day to drop a class or withdraw
Nov. 26- 27	Thanksgiving Holiday – NO classes
Dec. 3	Study Day – NO classes
Dec. 4-10	Final Exams
Dec. 14	Grades Due at 3 p.m.