Syllabus for Math 3260 sec. 53 (CRN: 50915)

Spring 2022

Instructor: Lake Ritter, PhD   **Office:** D 122 (access through D 121)

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Office Hours: Tuesday & Thursday 11 am to noon & by appointment (virtual and in person available)

Course Home Page http://facultyweb.kennesaw.edu/lritter/Ritter3260_Su2023.php

Course Description This is a three hour first course in Linear Algebra. An introduction to linear algebra and some of its classical and modern applications. Among topics to be included will be systems of linear equations, matrices, determinants of matrices and applications, vector spaces, and inner product spaces. We will meet for lecture twice weekly TR 8:00 am to 10:45 am in D 112. Students are expected to attend all lectures and to keep up with course assignments. **Note:** During the 8 week summer session, each class meeting will roughly equate to one week's worth of class meetings during a fall or spring session.

Prerequisites: A grade of C or better in Math 1190, or approval of the math department chair.

Required Course Materials: Text: *Linear Algebra and its Applications* 6th Edition by David Lay, Steven Lay, and Judi McDonald

Calculator: A calculator capable of performing matrix arithmetic and operations will be needed (e.g. TI-83/84, TI-89, or TI-Nspire).

Day One Access

This class is participating in a program called Day One Access. Please see the statement at the end of this syllabus on the Day One Access program. Unless you opt-out, you do not have to purchase the course text on your own.

You will access the ebook through D2L on the content tab.

Learning Outcomes: Upon completing this course, students will be able to

1. determine whether a linear system is consistent and find general solutions of systems via elimination or matrix operations;

2. perform matrix operations including inversion and computing determinants as well as identify rank, nullity, and various spaces associated with a matrix;

3. identify vector spaces and describe bases, subspaces, dimension, and associated coordinates;

4. identify inner product spaces, use inner products, determine if vectors are orthogonal, perform orthogonal projections, and apply the Gram-Schmidt process;

5. use the characteristic equation of a matrix to find eigenvalues and eigenvectors and perform matrix diagonalization.

Grading and Evaluation Your course grade will be the weighted average of your score on 4 semester exams, one comprehensive final exam, class participation, inclass quizzes, and your grade on the glossary project. The grades will be weighted as follows:

Table 1: Grade Weights

Exam 1	Exam 2	Exam 3	Participation	Quiz Avg.	Final
Tu 6/13	Th 6/29	Th 7/20	Daily	Daily	Tu 7/25
20%	20%	20%	5%	15%	20%

$$A = 90\%\text{--}100\%, \quad B = 80\%\text{--}89\%, \quad C = 70\%\text{--}79\%, \quad D = 60\%\text{--}69\%, \quad F = 0\%\text{--}59\%$$

Midterm Grades: A midterm grade will be assigned by the midterm grade due date identified on the Summer 2023 academic calendar (Tuesday June 20, 2023). This midterm grade is for assessing mid-semester performance prior to the last day to withdraw without academic penalty. You may view your midterm grade in Owl Express. Note that only your final grade will be officially recorded on your academic transcript.

Exams: We will have three mandatory semester exams. The exam dates are shown in the grade table 1 as well as the important dates table 2 near the end of this syllabus. You will need a calculator with matrix operation functions; **NO device with internet access may substitute for a calculator**. You may be required to answer some exam questions without access to a calculator. Except in the case of an excused absence (see attendance and make-up policy), a missed exam will be assigned a grade of zero. We will have one comprehensive final during the time designated by the University. The final is 20% of the semester grade. The following two policies regarding the final exam apply:

- If your course average prior to the final exam is at least 90%, you will be exempted from the final exam and will receive a course grade of A.

- The numerical grade on the final exam will replace the lowest <u>nonzero</u> semester exam grade if it is to your advantage.

Quizzes & Homework: I will assign problems from the textbook. Doing these problems is critical to mastering the course content. I will not collect the homework for a grade. Most class days, we will have a brief quiz (about 10 minutes). The quiz problems will come from the assigned homework exercises (either exactly or slightly modified). At the end of the semester, the lowest quiz grade will be discarded and the remaining will be averaged together to give the quiz grade for the semester. This quiz grade is 15% of your semester grade.

Participation: Most class days we will set aside time for you to work (individually or more likely in small groups) doing math. Full credit for participation will be given for attending class and participating in this work. An unexcused absence will result in a partipation grade of zero. Excused absenses will not count against your participation grade. We have fifteen class days. Each day that you attend the entire class session, you will receive one point. Letting P be the number of points you acquire, and S be the number of excused absences you have, the participation grade will be given by the formula

$$\text{Participation} = \text{MIN}\left(100\%, \frac{P}{14 - S} \cdot 100\%\right)$$

Attendance and Make-up Policy: Regular class attendance is critical to academic success. Hence I strongly encourage you to attend all classes and keep up with assignments and course events. An unexcused absence will result in a grade of zero for any graded item missed that day. That said, I will excuse an absence if (1) I am informed as soon as possible (via email or voicemail), and (2) there is a good reason. Good reasons include (but are not limited to) your illness or the illness of someone who depends on you, an academic or University sports commitment, a legal obligation, or an unforeseen travel issue. Reasons that are not excusable include (but are not limited to) over sleeping, or working on a project for another class.

Missing an Exam: All exams are mandatory. In order to be excused from an exam, you must notify me in advance (or as soon as circumstances allow), and provide documentation (e.g. doctor's note, order to appear, notification from a faculty adviser) of your reason for missing the exam if I ask for it. If you meet both of these criteria, I will allow your grade on the final exam to substitute for the missed exam. **A grade of zero for an unexcused, missed**

exam is not subject to being replaced by the final exam grade. In other words, all exams should be taken if not excused. Using the grade from the final exam to replace an excused, missed exam is independent of having the final exam score replace your lowest test score. (That is, given appropriate circumstances, it may be that the grade on the final exam is counted more than twice.)

Academic Integrity Every KSU student is responsible for upholding the provisions of the Statement of Student Rights and Responsibilities, as published in the Undergraduate and Graduate Catalogs. Section II of the Statement of Student Rights and Responsibilities addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimal one semester suspension requirement.

Notice on Course Withdrawal: Students are solely responsible for managing their enrollment status in a class; nonattendance does not constitute a withdrawal. Per university policy, I will assign a grade of WF to all students who do not complete the semester, where not completing the semester is defined as ceasing to attend class and participated in graded items **on or prior to July 11**. I am required to report the last date of attendance when assigning a grade of WF. **My compliance with this policy may affect your financial aid.**

Students with Disabilities I will attempt to accommodate all students with special needs to the best of my ability, but it is the responsibility of the student to make their needs known to me. Students with disabilities who believe they may need accommodations in this class are encouraged to contact the counselor working with disabilities at 470-578-7361 (Marietta) or 470-578-2666 (Kennesaw) as soon as possible to better assure that such accommodations are implemented in a timely fashion. (Additional contact information email: sds@kennesaw.edu and webpage: http://studentsuccess.kennesaw.edu/sds/index.php).

On Diversity and Inclusion: Kennesaw State University prides itself on offering a premiere, personalized educational experience for leadership and engagement within a diverse nation and world. This educational experience is achieved through recognition and appreciation of the differing backgrounds and experiences reflected within

the University community. It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit.

Cell Phone, Tablet, Laptop Policy Use of laptops, cell phones, or tablets for non-class related activities is **not allowed during class**. Any student who must be repeatedly asked to refrain from texting or surfing the web will be invited to leave. **At no time will still or video photography be allowed during class.**

Table 2: Important Dates

May 30	First Day 8 Week Session	June 13	Exam 1
June 20	Midterm Grade Deadline	June 27	Withdrawal Deadline
June 29	Exam 2	July 4	Independence Day Holiday (no class)
July 20	Exam 3	July 24	Last Day of 8 Week Session
July 25	Final Exam	9:00 to 11:00 am	D 112

Day One Access

This class is part of a textbook program called **Day One Access**. The week before classes begin, you should have received an e-mail from KSU University Stores with pricing and your personalized link to opt-out (please check your junk folder if not in your inbox). You will also receive an email on the first day of class and then a reminder email the day prior to the opt-out deadline.

You will access the ebook through D2L on the content tab.

The purpose of Day One Access is to make sure that you have access to the digital course materials on the first day of class at a highly competitive rate. Everyone enrolled in the course will automatically have access to the digital course materials through drop/add. Those who have not opted-out or dropped the class by June 5th, will receive a charge from the bookstore on their OwlExpress student account the following week. Please check your email for the link to opt out if you choose to do so. The opt out deadline is June 5 at 11:45pm.

If you opt out, you will not be charged, but you will need to purchased your required material directly from the publisher or other sources. If you need any help, please contact DayOne@kennesaw.edu.