Syllabus for Math 300, *Linear Algebra*, Fall 2019

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Office Hours: MWF 12:00noon-1:00PM and by appointment.

TEXT: *Linear Algebra and its Applications*, David Lay, 5th edition. (Required)
Student Study Guide for Linear Algebra and its Applications, 5th edition. (Recommended)

OTHER MATERIALS: You need a notebook to hold notes homework assignments. PENCIL - all quizzes and tests must be done in pencil. Those done in pen will have points deducted.

PREREQUISITE: Math 236

COURSE DESCRIPTION: In this course students will develop an understanding of the basic theory and applications of linear algebra. We will cover most of chapters 1-5 in the text although not necessarily all of the sections. Topic include systems of linear equations, matrices, determinants, linear transformations, eigenvectors and vector spaces. We will use the software system Mathematica to explore concepts. Mathematica is available for JMU students by following the directions here: https://www2.lib.jmu.edu/forms/mathematica/

GRADING: The grading will be assigned the following scale:
  A: 90-100%   B: 80-89%   C: 70-79%   D 60-69%   F: Below 60%

There will be no curves and no extra credit. I will assign +/- on an individual basis. Points are assigned as follows: Quizzes (10) - 100 points, Midterm exams (3) - 100 points each, Project - 30 points, Final exam - 150 points

QUIZZES: There will be a 10 point quiz each Friday. This quiz will cover material through the previous class. Quiz questions will include definitions, true/false questions and questions similar to homework questions. After class, write down any definitions or theorems on index cards. Use these cards to study for the quizzes and exams. You do not have to know the definition word for word from the text or the notes, but it should be *correct* and *complete*. The 10 best quiz scores will be kept, and the rest will be dropped. There will be no make up quizzes given. The quizzes are a good way for you to gauge your understanding of the current material and to keep up with the homework.

PROJECT: A project will be assigned in November. This will involve research into an application of linear algebra and a poster presentation during the last week of class. You may work in groups of 1-3 students. The project will be worth 30 points. More information will be available closer to November.

UNIVERSITY POLICIES For University policies for attendance, inclement weather, disability accommodations and religious accommodations, please see: http://www.jmu.edu/syllabus/

HONOR CODE You are to abide by the JMU honor code at all times. Ignorance of the law is no excuse. Cheating will not be tolerated and will be prosecuted to the fullest extent. Familiarize yourself with the honor code here: http://www.jmu.edu/honorcode/

MIDTERMS and FINAL: There will be three midterms during the semester worth 100 points each and a cumulative final exam worth 150 points. The questions on the exams will be similar to homework questions and will contain short proofs. If you cannot make it to a scheduled exam, you MUST contact the instructor BEFORE the exam if at all possible, or if an emergency, WITHIN 24 HOURS after the exam if you need to schedule a make up exam. Make up exams will only be given for extreme excuses. A doctor's note or some other physical excuse is required. Dates for exams (subject to change):

Midterm I - Friday, Sept 20,   Midterm II - Friday, Oct 18,   Midterm III - Friday, Nov 15,
Final Exam - Monday, Dec 9, 10:30am-12:30pm

HOMEWORK: Homework will be assigned, but not collected. Homework, however, is of the utmost importance! You must keep up with the homework, and do it everyday. There will be opportunities to ask questions about the homework problems at the beginning of each class. However, there may not be time to answer everyone's questions, or go over every homework problem. You are encouraged to work together in groups on the homework problems. Here is a homework strategy that I recommend:

- Before class, read the section that we will go over.
- That evening, read the section again, paying particular attention to the example problems. Then try the homework.
- If you can't get started, look for a similar example problem in the text.
- After getting a solution, check the answer in the back of the book. If you are correct, go on.
- If not, put a star by the problem, and try it again.
- If you still cannot solve the problem, even knowing the answer, then put two stars next to it, and ask about it in class.
- The next day, try all of the problems with one and 2 stars again. Be sure that you can do them without looking at the answer.
- When reviewing for quizzes and exams, pay particular attention to the starred problems.

ADDITIONAL HELP: Expect to put a lot of time and effort into the class and homework. Do NOT allow yourself to fall behind! This class moves very quickly, and there is not time to catch up. If you feel yourself falling behind, come to my office hours to discuss how to keep up. If you need extra help, come to office hours. The Science and Math Learning Center (SMLC) is located on the first floor of the Student Success Center and provides free, drop-in tutoring (i.e. No appointment needed) Monday through Thursday 10AM-8PM, Friday 10AM-2PM, and Sunday 5PM-8PM. You are welcome to e-mail homework questions to me, but please include the entire question, because I may not have access to a book when I answer your e-mail.

FIRST WEEK ATTENDANCE POLICY: At the instructor's discretion, any student registered for a class in the Department of Mathematics and Statistics who does not attend at least one of the first two scheduled meetings of the class (or does not attend the first scheduled meeting of a class that meets once a week) MAY be administratively dropped from the class. Students will be notified by e-mail if they will be dropped. Students who fail to attend should not assume they will be administratively dropped by their instructor; it is the students responsibility to drop the course on their own or they will receive a grade at the end of the semester. All students are responsible for verifying the accuracy of their schedules and changes made in their schedules.

LEARNING: Your goal in this class is to learn Linear Algebra. My role is to facilitate that learning. You will get out of this class what you put in to it. There are no shortcuts. You MUST do the homework. You MUST study for the quizzes each week. You MUST get help as soon as you do not understand a concept so that you can LEARN it and move on to the next one. Learning is not easy. It takes effort and persistence. It is a struggle. Do not see your mistakes as failures, but rather as learning opportunities! It is the struggle that leads to learning. Embrace the challenge.