

Math 511: Linear Algebra

Course Syllabus
Summer 2014

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Textbook: *Linear Algebra with Applications, 8th ed.*, by Steven J. Leon.

Other Materials: Students are not allowed to use calculators, or any other devices, on exams, but may use any resources they like while doing other work for this course. The problems on exams will be structured so that a calculator is not necessary.

Attendance: Attendance is required and expected. Students who miss class for any reason are responsible for the material covered that day, and any work that is due. Late work will not be accepted after it has been handed back to the rest of the class.

In case you must miss an exam, you will be allowed to make it up before it is returned to the other students in class (assume that this will be the very next class). You *must* contact me as soon as possible (email is best) to notify me of your intent to take the exam. It will then be available for you to take in the Testing Center in Grace Wilkie Hall. The Testing Center charges a fee of \$10.

Course Outline: This course will cover vector spaces, linear transformations, inner product spaces, and the theory of eigenvalues in detail. If there is time, we could also briefly study canonical forms or some numerical methods, depending on the interests of the class as a whole.

We will use the required text as the main reference for this course, and problems will be assigned from it regularly. However, we will not follow the text in order. We will begin in Chapters 3 and 4, filling in details from Chapters 1 and 2 as necessary. We will then study the second half of Chapter 5, and the first

half of Chapter 6. While this may seem rather odd, I believe that this course structure will result in a better overall understanding of linear algebra for the students than simply following the book linearly. (Ironic, right?)

Recommended Exercises: For each lecture, I will post 10-15 recommended problems on the course webpage (not blackboard!). The only way to learn mathematics is to do it yourself, so it will be very important to complete these. All of these exercises are for your own benefit, and will never be collected. Some of the problems will be similar to examples presented in class; others will be brand new. You should expect exam questions to be similar to these recommended exercises.

Good Problems: In addition to recommended exercises, each week you will be assigned a set of *Good Problems*. These assignments will consist of 5–10 problems that will be collected, and graded based on quality of work *and* presentation. I will hand out a guideline to completing the good problems before the first set is due. These good problems will be based on the recommended exercises, but may be difficult to complete without doing the REs first.

Exams: There will be two (2) midterm exams accounting for 40 % of your final grade, and a comprehensive final exam worth 30 %. You will be allowed to use a 3×5 note card on each exam. The questions will be similar to the recommended exercises. We'll discuss this more before the first exam.

The exam schedule for this summer is as follows:

Exam	Date	Tentative Sections Covered
Midterm 1	Friday, 13 June	3.1–3.4
Midterm 2	Thursday, 3 July	3.5, 3.6, 4.1–4.3
Final Exam, pt 1	Thursday, 24 July	Chs 3–4, 5.3–5.6
Final Exam, pt 2	Friday, 25 July	Chs 3–4, 6.1–6.6

Project: Finally, each student will be required to complete a project. Students will have the option to choose between a pure theoretical project or an applied project. Thus each student will be able to tailor at least a portion of the course to their own interests. Further liberties of choice could be given for the project, depending on the class's overall progress in the course. We'll discuss this more around the midpoint of the semester.

Grading: Your grade will be determined as follows:

Good Problems (8)	1.25 % each
Midterm Exams (2)	20 % each
Final Project	20 %
Final Exam	30 %

Your final letter grade will be based on the following scale:

90 – 100%	A	76 – 78%	C+
88 – 90%	A–	68 – 76%	C
86 – 88%	B+	60 – 68%	D
80 – 86%	B	< 60%	F
78 – 80%	B–		

There will be no extra credit, and I will not grade on a curve.

Academic Honesty: Cheating will not be tolerated. Read the Student Handbook for Wichita State University’s official cheating policy.

Special Needs: If you have any disability that may impact your ability to carry out any assigned course work in the time allotted, contact the Office of Disability Services (DS), Grace Wilkie Annex, room 173, 978–3309.

Assistance: I strongly believe that it is beneficial for students to work together on recommended exercises, good problems, and in preparation for exams. However, it is only beneficial to those students who put in the effort to learn and understand the material; e.g., copying solutions to the good problems from a friend will not help you do well on the exams.

Credit Hours: This is a **3 credit hour class**. Success in this course is based on the expectation that students will spend a **minimum of 135 hours** over the length of the course for instruction, preparation, studying, and/or course related activities. This amounts to a *minimum* of approximately twelve (12) hours per week outside of class.