SYLLABUS
MATH 344–Linear Algebra
Section 01
MWF 10:00-10:50 Kearns 110
Spring 2019

Instructor:
Mary Wilkerson, Ph.D.
[redacted]
Smith Science (SCI) 207A

Office Hours:
MWF 9-9:50am and 11-11:50am,
MW 2-2:50 pm, and by appointment
Outreach:
Th 1-2pm in AOC2 Cafe

Prerequisite: Math 161 with a grade of C or better.

Text: *Linear Algebra and its Applications, 5th Edition*, by David C. Lay

Course Objective: The purpose of Math 334 is to provide math, science, and engineering students with an introduction to the basic concepts and techniques of linear algebra. Linear algebra is a branch of mathematics concerning vector spaces and linear maps between them. We will approach the topic by investigating systems of linear equations (which are typically represented using matrices and vectors), matrix algebra, determinants, vector spaces and subspaces, linear transformations, and eigenvectors. A general goal for this course is to expand both your critical thinking and problem solving skills by applying the theory and techniques covered in this class to solve mathematical problems. More specifically, you should be able to reason and write clearly about linear algebra—providing definitions, counterexamples, and simple proofs.

Class Attendance As stated in the University catalog, students are expected to attend every class session. Note that absences, whether excused or not, do not absolve you from your responsibility to keep up with the material, turn in old assignments, or make note of any new assignments. If you must miss class, please make appropriate arrangements with a classmate regarding notes or classwork, read through your notes and the book, and then if you have questions see me before the next class period.

Homework Homework problems will be assigned and collected on a roughly weekly basis. For many of you, this will be the first course in which you are expected to deal regularly with definitions and proofs. The homework (and lectures and exams) will reflect a mixture of computations, proofs, and applications. A subset of the assigned problems will be graded for accuracy; the rest will be graded for completion.

Your lowest homework grade will be dropped. Late homework will not be accepted. I may, however, accept scanned and e-mailed homework in lieu of a hard copy if it is sent *on time*. All written assignments must meet the following standards:

- your name and the assignment number is written on the first page,
- the solutions (including the statement of the problem) are numbered and written in order,
- your solutions show supporting work,

- multiple pages are stapled or clipped together with your name on each page, and
- any problems requesting proof or explanations use full sentences.

To emphasize, you may not receive full credit for problems in which you do not show your work.

You are encouraged to discuss homework problems with classmates, and you are also encouraged to check your work against the answers in the back of the text. However, *you are expected to individually write up your solutions, and you are responsible for your own understanding of the material.* Direct copying of the solutions from any source will be considered a violation of the honor code.

Quizzes I will give short quizzes throughout the semester. These quizzes will be unannounced, but will also be open book, open note, *and* you may work on them with your peers or ask me for help. These will typically be given at the end of class and will emphasize material we just covered. Thus, you should do well on these quizzes if you make an effort to follow along in lecture and are willing to ask for help if you are stuck. If you cannot turn in a quiz by the end of the class period, you may turn it in by the next class period. At the end of the semester, I will drop your lowest quiz grade.

Exams There will be three major exams and a cumulative common final exam. Exam dates will be announced at least two weeks in advance. Make-up exams will be made solely at my discretion. The earlier I am aware that you will need a makeup, the more likely I will be to cooperate with you in arranging one.

Projects Toward the end of the semester, you will be asked to pair off and give a presentation on an application of linear algebra. Details on this assignment will be posted later in the semester.

Grade Policy Your course grade will be weighted as follows.

Quizzes	4%
Homework	10%
Exams	48% (16% each)
Final Project	8%
Final Exam	30 %

Grade Scale: The grading scale will be no more stringent than the following:

A:	90–100	B+:	87–89	B:	80–86	C+:	77–79
C:	70–76	D+:	67–69	D:	60–66	F:	below 60

Students with Disabilities: Any student with a documented disability needing academic adjustments or accommodations is requested to speak with me during the first week of class. All discussions will remain confidential.

Classroom etiquette: It is important to maintain an environment conducive for learning. Classroom chatter and cell phone usage are distracting to your fellow students (especially those who may have learning or other audio/visual disabilities), so please be considerate of others and refrain

from these activities while in class. If you fail to comply, you will be asked to leave the class and be counted absent.

Statement of Student Conduct: Coastal Carolina University is an academic community that expects the highest standards of honesty, integrity and personal responsibility. Members of this community are accountable for their actions and reporting the inappropriate action of others and are committed to creating an atmosphere of mutual respect and trust.

Student Learning Outcomes

The successful student in Linear Algebra will be able to:

- use matrices to solve linear systems of equations;
- perform basic arithmetic operations on matrices;
- compute the inverse, determinant, and transpose of a matrix;
- perform operations on vectors in n-dimensions;
- identify and prove basic results of vector spaces and subspaces;
- determine whether a set of vectors is a basis for a vector space;
- determine the rank of a matrix;
- diagonalize a matrix;
- compute eigenvalues and eigenvectors and find eigenspaces;
- identify and use linear transformations;
- identify the kernel, range and matrix of a linear transformation.

The course syllabus provides a general plan for the course; deviations may be necessary.