Professor:	Dr. Chris Black
Office:	Bouillon Hall #122
Office Hours:	MW 1:00 - 1:50, TTh 10:00 - 10:50, and by arrangement
Office Phone:	×2602
Email :	`blackc@cwu.edu` *(It is most reliable to reach me via email)*

Required Text:	*A First Course in Linear Algebra*, Robert Beezer, Version 3.30. Instructions for downloading the text are available on Canvas.

Goals for course:

Upon completion of Math 265, students will:

- ... be able to solve a linear system using matrix methods
- ... be able to correctly use the specialized vocabulary and notation of linear algebra;
- ... be able to think abstractly about vector space structures;
- ... understand the axiomatic structure of vector spaces;
- ... know how and when to use linear algebraic techniques to model and analyze application problems.

Course Philosophy:

Linear algebra is of fundamental importance in all fields of higher mathematics and in nearly all applications of mathematics, particularly those involving technology. At its core, linear algebra is a study of structure. The primary concept in the course is that of a *vector space*, which is a set of objects that act like vectors in two or three (or higher) dimensional Euclidean space. Many of the calculations in linear algebra can be facilitated through the use of technology, such as TI-89 (or above) calculators or computer algebra systems such as MATLAB or Mathematica. However, we will NOT emphasize the use of technology in this course, but instead rely on pencil and paper calculation.

A Note on Vocabulary:

Perhaps more than any other course in the mathematics curriculum, linear algebra is swimming in new vocabulary terms. It is crucial that you keep up with the new vocabulary words, and understand what they mean. According to Vygotsky's theory of language acquisition, *thought is not merely expressed in words; it comes into existence through them.* Without mastery of the vocabulary, you cannot fully comprehend the depth of linear algebra. Besides, it's always nice to know what the questions are asking.

PROBABLE COURSE TOPICS:

- ▷ Matrices and systems of equations
- ▷ Abstract vector spaces and subspaces
- ▷ Determinants (briefly)
- ▷ Eigenvectors and eigenvalues
- ▷ Linear transformations (functions on vector spaces)

HOW TO SUCCEED IN THIS COURSE:

Daily attendance is expected, and considered necessary for success. If you need to miss class for some reason, contact me in advance via email. It is your responsibility to find out what occurred in class while you were absent, from either another student or the professor. You are responsible for any announcements made in class regarding assignments and quizzes, whether or not you are present.

All work handed in for the courses must be legibly written with correct mathematical notation and sufficient explanation that another student could follow your reasoning. A complete explanation is required to receive full credit on homework checks, quizzes and exams.

GRADING:

Daily Homework Checks:	Scaled to 100 points total (26 of these)
In-Class Quizzes:	50 points each (5 of these)
Final Exam:	150 points

HOMEWORK:

I will assign but not collect daily homework; the text contains solutions to many of the problems. You are responsible for self-assessment of your homework and for not letting yourself get behind. Understanding the topics at the beginning of the course is crucial to your success with the remainder of the material. Daily homework checks (see below) will assess your understanding of the material in the previous night's homework.

A few brief questions about the previous day's homework – and **only** the previous day's homework – will be taken at the beginning of class. I will happily take any and all questions during office hours.

HOMEWORK CHECKS:

In place of collecting the homework from the text, you will be assigned daily "homework checks" that contain one or two problems that relate the the main ideas of the section. This gives both you and me a quick way to assess your progress in the course. The problems on the homework check will not be taken verbatim from the homework set, but the same topics will be covered in the same amount of depth. Homework check sheets are housed on Canvas. You may either download and print the homework sheet, or you can NEATLY copy the question onto regular paper, answer the questions there, and submit your work.

Homework checks are due at the beginning of class, and will not be accepted late unless you have written documentation from an appropriate source or you have made arrangements with me in advance. Homework checks are graded out of 10 points each, but the total score for all 26 homework checks will be scaled to 100 points for the final grade calculation.

QUIZZES:

We will have five quizzes (mini-exams) over the quarter, roughly one every other week. The dates of these quizzes are noted on the class schedule. These quizzes will take the full period and are worth 50 points each. If you need to miss a quiz for a school-sponsored event such as a field trip or participation in sports, a make up quiz will only be offered if arranged in advance. Otherwise, no make-up quizzes will be given unless you can provide documentation for an extenuating circumstance such as hospitalization or incarceration. However, one quiz score may be replaced by the score on the relevant portion of the final exam (see below).

FINAL EXAM:

The final exam is cumulative and MUST be taken during the officially designated time. The final exam will consist of five sections that roughly correlate to the material covered on the five quizzes. If it is in your favor, one (and only one) quiz score can be replaced by the scaled score on the corresponding section of the final exam. The final exam is worth 150 points.

HONOR AND RESPECT:

Each of us should consider our placement at this institution to be a privilege. We need to have respect for one another, and for ourselves. In light of these facts, cheating in any form will not be tolerated. You are encouraged to work together on homework problems, however anything you turn in with your name on it should have been written by you alone. Any infractions may result in a zero for the assignment, a failing course grade, and the possibility of disciplinary action by the university.

DISABILITY SERVICES:

Students with special needs or disabilities who wish to set up academic adjustments in this class should provide me with a copy of the "Confirmation of Eligibility for Academic Adjustments" from the Center for Disability Services as soon as possible so we can discuss how the approved adjustments will be implemented in class. Students without this form should contact the Center for Disability Services, Bouillon 205, by calling 963-2171 or emailing dssrecept@cwu.edu.