

# Math 265 Syllabus

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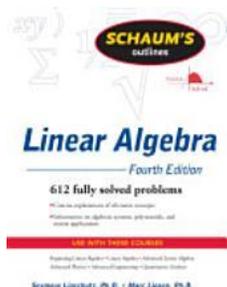
Office Hours: MTWF 10:00-10:50; or by appointment

If you need special arrangements because of a disability, please let me know.

## Course Content

Week 1-Vectors—Chapter 1  
Week 2-Matrix Algebra—Chapter 2  
Week 3- Systems of Equations—Chapter 3  
Week 4- Systems of Equations II—Chapter 3  
**Test I—Through Systems of Equations and Chapter 3**  
Week 5-Vector Spaces—Chapter 4  
Week 6-Linear Transformations—Chapter 5  
Week 7-Linear Transformations II—Chapter 6  
Week 8- Inner Product Spaces—Chapter 7  
**Test II—Through Linear Transformations**  
Week 9-Determinants—Chapter 8  
Week 10-Eigenspaces—Chapter 9  
**Comprehensive Final Exam**

## Text



## Course Description

Linear Algebra is one of the most useful mathematical subjects for modeling real world phenomena. The content is foundational for other mathematical areas. Additionally, linear algebra is often the first course in which mathematical conjectures are developed and proved as theorems. The content of this course is ubiquitous in nearly all mathematics courses that follow it.

## Advice to Students

Learning linear algebra (and much of advanced mathematics) requires computational practice and conceptualizing big ideas. There is no substitute for quiet time to reflect on the big picture. Additionally, however, research indicates that those who study efficiently, faithfully, and diligently with others learn more and get better grades than those who do not. Take time to explain the ideas of Linear Algebra to yourself. Learn the computations well, and work with others consistently. Realize that revisiting mathematical notions repeatedly, while making connections among them, is necessary to understand this subject.

## Grading

Weekly Quizzes 30%  
Tests 40%  
Final Exam 30%

**Note:** There will be no make-up quizzes or tests. Contact me well BEFORE a quiz or an exam if you have an unavoidable conflict. I cannot reschedule the final exam.

## Learner Outcomes

1. Students will be able to solve systems of linear equations.
2. Students will be able to perform basic matrix operations.
3. Students will be able to determine and use vector space properties.
4. Students will be able to translate information between the context of systems of equations, coefficient matrices, and the domain and range of a linear transformation.
5. Students will be able to solve problems requiring the use of eigenvalues and eigenvectors.

## Assessments

- Students will solve systems of linear equations.
- Students will perform the matrix algebra operations of scaling, addition, multiplication, inversion, transposition, and computing determinants.
- Students will determine whether subspaces of  $\mathbb{R}^n$  satisfy basic vector space properties.
- Students will determine information about two contexts based on information in the third context. In particular, the number of solutions, the singularity or determinant of the coefficient matrix, and the linear independence or span of the domain and range.
- Students will determine eigenvalue, eigenvectors and the diagonalization of a given matrix.

## Technology

You will need a TI-83 or TI-84 for this course. You may also use a TI-89, but you are responsible for learning how this calculator works. The instructor will use a TI-84 for all demonstrations.

## Academic Honesty

Central Washington University holds students to the highest standards of academic integrity. See 106-120-027 Proscribed Conduct here: <http://www.cwu.edu/~saem/index.php?page=student-conduct-code> Any cases of academic dishonesty will be dealt in the manner prescribed by the conduct code.

## Final Comments

Weekly quizzes demand that you keep up with the content and do the homework. Contact me early in the course, if you are having difficulty. Linear algebra is a fun course with interesting content. Study hard and have a great quarter.