

## COURSE DESCRIPTION

Dept., Number	Math 319	Course Title	Introduction to Linear Algebra
Semester hours	3	Course Coordinators	Bing Wei, Associate Professor Xin Dang, Assistant Professor

### Current Catalog Description

Vectors, matrices, determinants, linear transformations, introduction to vector spaces.

### Textbook

Steven J. Leon. *Linear Algebra with Applications*, 7th edition, Prentice Hall, 2005.

### References

### Course Outcomes

Upon successful completion of this course, the students:

1. understand the concepts and rules of linear algebra,
2. possess enhanced problem-solving skills,
3. can apply concepts and theories learned in this course to solve application problems.

### Relationship between Course Outcomes and Program Outcomes

The ABET/CAC criteria for computer science require the study of at least 15 hours of mathematics beyond the precalculus level. The BSCS program requires the student to take either Math 263 (Calculus III) or Math 319 (Linear Algebra) to satisfy part of this expectation.

All three course outcomes contribute to program outcomes (a) and (j).

### Prerequisites by Topic

Introductory differential and integral calculus (Math 262)

### Major Topics Covered in the Course

The content of the course includes matrices and systems of equations, determinants, vector spaces, linear transformations, Eigenvalues and Eigenvectors, and diagonalization. It covers chapters 1, 2, 3, and 4 and some parts of chapter 6 of the textbook.

### Assessment Plan for the Course

The instructor assesses the student performance related to the course outcomes by using examinations, quizzes, and homework assignments.

How Data in the Course are Used to Assess Program Outcomes (unless adequately covered already in the assessment discussion under Criterion 4)

The conduct of this course is not governed by the ABET program faculty. No data are collected that are used to assess program outcomes directly.

### Estimate Curriculum Category Content (Semester hours)

Mathematics 3 hours