

The COCC Math department is currently developing a 2-credit Introduction to Linear Algebra course that will be offered as **MTH 199: Introduction to Linear Algebra** in Fall 2017 and Spring 2018.

We plan for the course to go through the curriculum approval process at COCC during the 2017-18 academic year. It will then be offered as **MTH 26x: Introduction to Linear Algebra**.

We also plan to communicate with the OSU Math Department and College of Engineering so that students who transfer to the OSU College of Engineering will have met the MTH 306 requirement if they have taken both MTH253: Calculus III and this Introduction to Linear Algebra course at COCC. We will link to that equivalency information once the approval process with OSU is complete.

Below is a course description and student learning outcomes for this new course. If you have questions about this course, please contact Jessica Giglio ([jgiglio@cocc.edu](mailto:jgiglio@cocc.edu)) and/or Kathy Smith ( [kmsmith@cocc.edu](mailto:kmsmith@cocc.edu) ), mathematics faculty at COCC.

Course Description:

Provides an introduction to linear algebra concepts for science, math, and engineering majors. Topics include vectors, matrices, systematic solution to linear systems, determinants, linear dependence and independence, linear transformations, and eigenvalues and eigenvectors. Recommended preparation: MTH 252.

Course Outcomes:

*As a result of completing this course, students will be able to...*

1. Use matrix notation, basic properties of determinants, and algebraic properties of matrices to express and solve linear systems of equations.
2. Apply properties of vector algebra to solve two- and three-dimensional geometric problems.
3. Describe a linear transformation given the corresponding matrix, and find a matrix given the description of the linear transformation.
4. Determine linear dependence and independence for a set of  $n$  vectors in  $n$ -space.
5. Find the characteristic polynomial and eigenvalues/eigenvectors of particular (small) matrices and explain the concepts as they apply to matrices of any size.

Textbook:

*Matrix and Power Series Methods*, Lee, ISBN 9781118817742 (Custom Pub.; 5th Ed. (2013));