

North Hennepin Community College

MATH 2300: Linear Algebra

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites:

This course requires any of these three prerequisites

A score of 3 on test Adv Placement Calculus BC

MATH 1222 - Calculus II (Minimum grade: 1.67 GPA Equivalent)

MATH 2220 - Calculus III (Minimum grade: 1.67 GPA Equivalent)

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course includes vectors and vector spaces, matrices, matrix algebra, linear systems of equations, determinants, linear transformations, eigenvalues and eigenvectors. Students will also be expected to construct proofs relating to linear dependence and/or independence, the span of a set of vectors, and whether a set of vectors satisfies the vector space axioms.

B. COURSE EFFECTIVE DATES: 08/27/1997 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. See Course Description and Course Outcomes

D. LEARNING OUTCOMES (General)

1. Compute, explain, and apply key properties and definitions related to eigenvalues and eigenvectors of a matrix. (MnTC Goal 4: a, b, d) (NHCC ELO 1, 2, 4)
2. Generate solutions to systems of linear equations using matrices and their properties (MnTC Goal 4: a, b, d; Goal 2: a, c);
3. Examine systems of linear equations and classify their solutions (G4: a, b, d; G2: a, b, c);
4. Examine vector spaces and subspaces to determine their properties (such as rank, nullity, bases, and change of basis) (G4: a, b, c, d; G2: a, c); and
5. Identify and determine eigenvalues and eigenvectors and explore their applications (such as characteristic equations, diagonalization, and linear transformations) (G4: a, b, d; G2: a, b, c).

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 04 - Mathematical/Logical Reasoning

1. Illustrate historical and contemporary applications of mathematical/logical systems.
2. Clearly express mathematical/logical ideas in writing.
3. Explain what constitutes a valid mathematical/logical argument(proof).
4. Apply higher-order problem-solving and/or modeling strategies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted