

## Huron Brief Course Outlines

Fall/Winter 2023-2024

**Course Title:** Methods of Matrix Algebra

**Course Number and Section**

MATH

1229A - 551

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Disclaimer: Information in the brief course outline is subject to change. The syllabus posted on OWL is the official and authoritative source of information for the course.

### Course Description:

Vectors; Equations of lines and planes; Linear Equations; Solution of Linear Systems; Matrix Algebra; Matrix Multiplication and Inverses; Determinants.

### Learning Outcomes:

Describe m-dimensional Euclidean space and carry out the vector operations for vectors in $R^m$
Write algebraic representations (as equation in different form) for different geometric objects such as lines, planes and hyper planes, in $R^m$ .
Recognize linear equations, systems of linear equations (SLE), and solutions of SLEs.
Solve SLEs using different methods: Gauss-Jordan elimination method, method of inverse matrix and Cramer's rule, if applicable
Perform basic matrix operations: addition/subtraction, multiplication and powers, inverse and transpose matrices.
State what the rank of a matrix is, find it and use it to determine the number of solutions of an SLE.
Compute the determinant of square matrices using different methods: expansion along rows/columns and using the properties of determinant.
Use determinant of square matrices to find the inverse of invertible matrices.

### Textbooks and Course Materials:

Custom Book: Elementary Linear Algebra 2nd Edition by Venit/Bishop/Brown.

SKU: 9781774743652

### Methods of Evaluation:

Assignment	Due Date mm/dd/yy	Weight - %
Midterm	10/26/2023	35%
Final exam	Dec. TBD	40%

<b>Assignment</b>	<b>Due Date mm/dd/yy</b>	<b>Weight - %</b>
Online quizzes (weekly)	Ongoing	20%
Best midterm and final exam		5%

In solidarity with the Anishinaabe, Haudenosaunee, Lūnaapéewak, and Chonnonton peoples on whose traditional treaty and unceded territories this course is shared.