

Brief Course Outline

Course Title: **Methods of Matrix Algebra**

Course Number and Section:

MATH

1229B 551

Instructor Name(s): Mohsen Mollahajiaghahi

Instructor Email(s): mmollaha@uwo.ca

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 - %
Online quizzes	Biweekly	20
Midterm		35
Best midterm and final exam		5
Final exam		40

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

Monday, December 9, 2024