Huron AT WESTERN

Brief Course Outline

Course Title: **Methods of Matrix Algebra**

Course Number and Section: MATH 1229A 551

Instructor Name(s): Mohsen Mollahajiaghaei

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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 geomet-ric 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 in-verse 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 solu-tions 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.
Learn how to properly justify steps in mathematical calculations.

Textbooks and Course Materials:

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

Methods Of Evaluation:

Assignment	Due Date mm/dd/yy	Weight - %
Quiz 1		4
Quiz 2		4
Quiz 3		4
Quiz 4		4
Quiz 5		4
Midterm		35
Final exam		45

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

Thursday, April 11, 2024