



SISP 1112

Matrix Algebra

Course Description

This course is all about matrices. Matrices are rectangular arrays of numbers, symbols, or expressions, arranged in rows and columns. We define matrices and show how to add and multiply them. We show how to use matrices to solve a system of linear equations, and how to compute a matrix inverse. We also learn about determinants and learn how to find the eigenvalues and eigenvectors of a matrix.

Topics

Matrices, Gaussian Elimination, Reduced row-echelon form, Matrix Inverses, Linear independence, Gram-Schmidt process, Determinants, Eigenvalues and Eigenvectors

Grading Scheme

- Quizzes (50%)
- Final Examination (50%)

[Topics and grading schemes are subject to change as deemed appropriate. Students will receive information and guidelines in class on how they will be assessed for the course.]

Teaching Mode

The course will be delivered face-to-face.

Attendance Requirement

Attendance is expected and required. The minimum attendance required is 70%. Attendance for the assessment activities [e.g. group presentation and final exam] is mandatory.

Instructor(s) Profile

Prof. Jeffrey Robert CHASNOV

Prof. Chasnov is a Professor of the Department of Mathematics at HKUST. He received his BA from the University of California, Berkeley and a Ph.D. from Columbia University. He had postdoctoral appointments at NASA, the Stanford University, and the Université Joseph Fourier in Grenoble, France before moving to Hong Kong in 1993.

Jeff created five courses on Coursera, including four courses for the Mathematics for Engineers Specialization, and the recreational maths course- Fibonacci Numbers and the Golden Ratio. He was the author of numerous research articles in fluid turbulence and mathematical biology, and also online textbooks and YouTube videos.