

## **MATH S-21b. Linear Algebra and Differential Equations (CRN: 30190)**

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Topics to be covered include Gauss's method for solving systems of linear equations; matrices; determinants; vector spaces; linear transformations, eigenvalues, and eigenvectors; modeling by differential equations; graphical and numerical analysis of first order equations; first order systems of differential equations; phase plane analysis of systems; applications to population dynamics of biological organisms and mechanical vibrations.