

# MTH 238: Applied Differential Equations I

An introduction to numerical methods, qualitative behavior of first order differential equations, techniques for solving separable and linear equations analytically, and applications to various models (e.g. populations, motion, chemical mixtures, etc.); techniques for solving higher order linear differential equations with constant coefficients (general theory, undetermined coefficients, reduction of order and the method of variation of parameters), with emphasis on interpreting the behavior of the solutions, and applications to physical models whose governing equations are of higher order; the Laplace transform as a tool for the solution of initial value problems whose inhomogeneous terms are discontinuous.

CORE

**Credits:** 3

**Transfer Code:** Code A

**Lab Hours:** 0

**Lecture Hours:** 3

**Prerequisites:**

MTH 227 with a grade of "C" or higher

**Program:** [Mathematics](#)

**Semester Offered:**

Summer