MATH 285 – Differential Equations (3 Credits)

DESCRIPTION:

Theory and techniques for constant and variable coefficient ordinary linear differential equations. Also included are a number of non-linear types of ordinary differential equations. Emphasis will be on those differential equations arising from modeling real world phenomena.

Prerequisite: MATH 182 with a Grade of C or Better

OUTCOMES:

a. Learn how to apply separation of variable techniques and variation of parameters to solve a variety of real word-type problems.
b. Apply numerical solution techniques, including the Runge-Kutta methods, error-analysis and direction fields. May include a number of required computer lab assignments.
c. Be able to solve a variety of linear first-order equations using real and complex Eigenvalues, variation of parameters, and matrix exponential techniques.
d. Learn to apply techniques for homogeneous and non-homogeneous equations, reduction of order, constant coefficients.
e. Apply techniques such as the superposition and annihilator approach.
f. Understand and use the Laplace Transform, inverse transform, translation on the s-axis, and transform on the t-axis.

TEXT:

To be announced in class.

OUTLINE:

To be announced in class.

EVALUATION:

Grades may be determined by student performance in one or more of the following areas: in-class tests, take-home tests, homework assignments, quizzes, special projects, papers, attendance, and class participation. Degree of importance and types of assessment used will depend on the instructor.

This course satisfies the math requirement in the General Education Core component for selected degree and certificate programs at CSN.