DIFFERENTIAL EQUATIONS
MATH 2350

Course Description:
Topics include solutions of linear and first-order nonlinear differential equations with applications, higher-order linear differential equations with applications, power series solutions, and Laplace transform methods. 3 credits

Prerequisites:
MATH 1960 with a grade of C- or better

Overview of Content and Purpose of the Course:
The laws of nature are often described with differential equations. It is important for students in science, engineering, and mathematics to be familiar with these equations.

Anticipated Audience/Demand:
This course is designed to meet the needs of Science, Engineering, and Mathematics students.

Major Topics:

1) First-order Linear and Nonlinear Differential Equations with Applications
   a. Solution Curves and Direction Fields
   b. Separable, Linear, Exact Equations
   c. Solutions by Substitution
   d. Euler’s Method

2) Higher-Order Linear Differential Equations with Applications
   a. Homogeneous Equations with Constant Coefficients
   b. Nonhomogeneous Equations
   c. Applications- the Vibrating Spring

3) Power Series Solutions

4) Laplace Transform Methods

Methods:
This course will be presented by lecture, class discussion, and questions.

Student Role:
Students must attend and participate in class in addition to completing the course requirements.

Textbook:

February 2016