MAT 414: Introduction to Ordinary Differential Equations

MAT 414
Introduction to Ordinary Differential Equations
(3 credits)
Class Size: 10-25

Faculty: Dan Zacharia, Professor, Syracuse University
Administrative Contact: Tavish Van Skoik, Assistant Director, Project Advance

Course Catalog Description

First order differential equations. Second order linear differential equations. Power series solutions. Bessel's equations, Laplace transforms. Systems of first order differential equations. Applications.

Course Overview

MAT 414 is a first course in the study of differential equations. Topics covered include: the analytic and qualitative aspects of first-order differential equations (linear and nonlinear), second order linear equations, Laplace transforms, and systems of first-order linear equations.

Pre- / Co-requisites

To register for this course, students must provide documents confirming completion of one of the following prerequisites:

1. Passing Syracuse University MAT 295 and 296 with a grade of C- or better;
2. Earning a score of 4 or better on the AP BC calculus examination; or
3. Earning a qualifying score on University examinations
AND
1. Passing MAT 397 with a grade of C or better

Course Objectives

Students are expected to be able to:

- Take partial derivatives;
- Set up and evaluate integrals;
- Do integration by parts; and
- Work with elementary linear algebra

Laboratory

N/A

Required Materials

N/A

Instructor Recommendations

N/A