



<b>Division:</b>	Science/Mathematics	<b>Area:</b>	Mathematics
<b>Course Number:</b>	MATH 273	<b>Course Name:</b>	Introduction to Differential Equations
<b>Prerequisite:</b>	MATH 172		
<b>Corequisite:</b>	NONE		
<b>Hours Required:</b>	<b>Class:</b> 45	<b>Lab:</b> 0	<b>Credits:</b> 3 (three)

## Course Description/Purpose

This is an introduction to ordinary differential equations. The content of the course includes methods for solving first- and second-order ordinary differential equations, systems of differential equations, power series solutions and Laplace transforms. The purpose of this course is to introduce students to the theory and application of differential equations. Specifically, the course prepares students to apply differential equations to scientific, engineering and economic problems.

## Major Units

- First and Second Order Equations
- Series Solutions
- Laplace Transforms

## Educational/Course Outcomes

Student learning will be assessed by a variety of methods, including, but not limited to, quizzes and tests, journals, essays, papers, projects, laboratory/clinical exercises and examinations, presentations, simulations, portfolios, homework assignments, and instructor observations.

- Cognitive** Each student will be expected to *Identify/Recognize*. . .
- the identifiable characteristics of exact differential equations, separable differential equations and non-homogeneous second-order differential equations;
  - equations suited for series solution methods;
  - equations suited for Laplace Transform methods.

- Performance** Each student will be expected to *Demonstrate/Practice*. . .
- solve separable first-order differential equations;
  - solve exact first-order differential equations;
  - solve non-homogeneous second-order differential equations;
  - solve variable coefficient second-order differential equations;
  - solve second order equations using a power series;
  - solve initial value problems using Laplace Transform methods;
  - solve a system of first order equations.

- Attitudinal** Each student will be expected to *Believe/Feel/ Think* . . .
- sense the need for using calculus for solving problems involving change;