

MATH 374 [574]
Differential Equations (3 units)
Course Outline

Catalog Description.

Theory and application of linear ordinary differential equations, Homogeneous and nonhomogeneous linear equations, initial and boundary value problems, exact equations, variation of parameters, Euler equations, Solutions of non-linear ordinary differential equations of the first order and second order; Power series solutions, The Laplace transform, System of linear equations.

Prerequisite: Math 274

<u>Topics</u>	<u>Number of Weeks</u>
Chapter 1: Introduction to Differential Equations	1.0
Chapter 2: First Order Differential Equations	2.5
Chapter 3: Modeling with First Order Differential Equations	1.0
Chapter 4: Higher Order Differential Equations	3.0
Chapter 5: Modeling with Higher Order Differential Equations	1.5
Chapter 6: Series Solutions of Linear Equations	2.5
Chapter 8: Systems of Linear Differential Equations	1.5
Exams	1.0

Textbook: A First Course in Differential Equations, 10th Edition, by Dennis Zill

Additional Requirements for Graduate Students:

Graduate students need to complete an additional project on a selected topic.

Adopted: April 2020