

MATH 2552
Summer 2023

Course: MATH 2552, Differential Equations 4 credit hours

Instructor: Greg Mayer, Ph.D.
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Prerequisites: MATH 1502 OR MATH 1512 OR MATH 1555 OR MATH 1504 ((MATH 1552 OR MATH 15X2 OR MATH 1X52) AND (MATH 1522 OR MATH 1553 OR MATH 1554 OR MATH 1564 OR MATH 1X53))

Co-requisites: none

Course Description:

Methods for obtaining numerical and analytic solutions of elementary differential equations. Applications are also discussed with an emphasis on modeling.

Textbook:

Differential Equations: An Introduction to Modern Methods & Applications, by James R. Brannan and William E. Boyce (Third edition); John Wiley and Sons, Inc.

Course goals and learning outcomes:

The primary goal of this course is to prepare students to succeed in more advanced courses that require this course as a pre-requisite.

The learning outcomes for this course include the following:

- 1) Classify differential and apply their classification to determine which methods can be used to solve them.
- 2) Solve differential equations and interpret their solutions to characterize a system.
- 3) Model real-life situations using differential equations.
- 4) Write logical progressions of precise statements to communicate mathematical reasoning.