MA 26600 - Ordinary Differential Equations

Credit Hours: 3

Contact Hours: 3 hrs/week

Course Administration: Department of Mathematics

Instructional Materials:

- Pearson MyLabMath platform (https://www.pearson.com/en-us.html)
- "Differential Equations and Boundary Value Problems: Computing and Modeling", 6th Edition, Edwards/Penney/Calvis, Pearson, ISBN: 9780137540129.

Course Description: First order equations, second and n'th order linear equations, series solutions, solution by Laplace transform, systems of linear equations. It is preferable but not required to take MA 26500 either first or concurrently. Not open to students with credit in MA 26200, 27200, 36000, 36100, or 36600.

Prerequisites/Corequisites: MA 26100 (Minimum grade of C-)

Learning Outcomes:

- Understand the properties of and able to solve first-order differential equations, linear differential equations of second and higher orders, and linear systems of differential equations.
- Understand and able to apply basic numerical methods for solving initial value problems.
- Understand the properties of Laplace transforms and able to apply to solving differential equations and initial value problems.
- Apply differential equations to mechanical, physical, and biological models.

Topics:

- First-order equations
- Second and nth order linear equations
- Series solutions
- Solution by Laplace transform
- Systems of linear equations