

Department: Mathematics and Computer Sciences

Division: Applied Mathematics

Level and Major: Graduate

Course Title: Numerical Solution of Ordinary Differential Equations

Number of Credits: 3

Prerequisite:

Lecturer:

Course Description:

Course Goals and Objectives:

Course Topics:

- An introduction
- Eulers method
- Systems of differential equations
- The backward Euler method and the trapezoidal method
- Taylor and Runge-Kutta methods
- Multistep methods
- General error analysis for multistep methods
- Stiff differential equations
- Implicit RK methods for stiff differential equations
- Differential algebraic equations
- Two-point boundary value problems
- Volterra integral equations

Reading Resources:

Evaluation: