

Math 2410 — Elementary Differential Equations

Summer 2011

Course Information

Instructor: Ben Salisbury, Teaching Assistant
Email: benjamin DOT salisbury AT uconn DOT edu
Meeting Times: MTuWTh 11:00am–12:45pm in H310.
Course Text: *Differential Equations*, third edition, by Blanchard, Devaney, and Hall.

Grading Breakdown

Quizzes	Everyday (except exam days)	20%
Exam 1	Thursday, July 21	25%
Exam 2	Thursday, August 4	25%
Final Exam	Thursday, August 18	30%

Course Outline

Section	Title
1.1	Modeling via Differential Equations
1.2	Separation of Variables
1.3	Slope Fields
1.4	Euler's Method
1.5	Existence and Uniqueness of Solutions
1.6	Equilibria and Phase Lines
1.7	Bifurcations
1.8	Linear Equations
1.9	Integrating Factors for Linear Equations
2.1	Modeling via Systems
2.2	Geometry of Systems
2.3	Analytic Methods for Special Systems
2.4	Euler's Method for Systems
3.1	Properties of Linear Systems and the Linearity Principle
3.2	Straight-Line Solutions
3.3	Linear Systems with Real Eigenvalues
3.4	Linear Systems with Complex Eigenvalues
3.5	Linear Systems with Repeated and Zero Eigenvalues
3.6	Second-Order Linear Equations
4.1	Forced Harmonic Oscillators
4.2	Sinusoidal Forcing
5.1	Equilibrium Point Analysis
6.1	Laplace Transforms
6.2	Discontinuous Functions
6.3	Second-Order Equations
6.4	Delta Functions and Impulse Forcing
6.5	Convolutions