

Math 3410.004 Differential Equations Syllabus

Instructor: Bünyamin Sari

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Office hours: TR 2-4 PM or by appointment

Lectures: 3410.004 TR 8:00-9:20 BLB 245

Textbook

Elementary Differential Equations and Boundary Value Problems, Boyce and DiPrima, 10th Edition

Course website

www.math.unt.edu/~bunyamin/ See here for homework and other announcements.

Grading scheme

Homework 10%, Quizzes 15%, 3 Midterms 45%, Final 30%

Class schedule

Tuesday	Thursday
Aug 25: Basic notions, Mathematical models, Direction fields Section 1.1	Aug 27: Classification and solutions of some ODE's. 1.2, 1.3
Sep 1: First order ODEs, Integrating factors 2.1	Sep 3: Separable equations 2.2
Sep 8: Modeling with first order ODEs 2.3	Sep 10: Theory; existence and uniqueness theorem 2.4, 2.8
Sep 15: Autonomous equations and population dynamics 2.5	Sep 17: Exact equations 2.6
Sep 22: Midterm exam 1	Sep 24: Second order ODEs; homogeneous DEs with constant coefficients 3.1
Sep 29: Theory and solutions of linear homogeneous DE's, the Wronskian	Oct 1: Complex roots of the characteristic equation, Repeated roots and the reduction of order 3.3, 3.4
Oct 6: The method of undetermined coefficients 3.5	Oct 8: Variation of parameters 3.6
Oct 13: Mechanical vibrations 3.7	Oct 15: Midterm exam 2
Oct 20: Power series 5.1	Oct 22: Series solutions near ordinary points 5.2
Oct 27: Euler equations 5.4	Oct 29: Series solutions near regular singular points 5.5
Nov 3: Laplace transform 6.1	Nov 5: Solutions of initial value problems 6.2
Nov 10: Step functions 6.3	Nov 12: Midterm exam 3
Nov 17: Matrices 7.2, 7.3	Nov 19: Systems of first order linear equations 7.4
Nov 24: Homogeneous system with constant coefficients 7.5	Nov 26: Thanksgiving
Dec 1: Complex and repeated eigenvalues 7.6, 7.8	Dec 3: Last class day- Review
Dec 8: Final Exam, 8AM in class	