UF | Andrew Vince
Department *of* Mathematics

Search Andrew Vince

Differential Equations

MAP 2302-3141
Spring 2015

Time: MWF period 2
Place: Little 205
Phone: 352-294-2339
Office: 438 Little Hall
Email: avince@ufl.edu

Textbook: Fundamentals of Differential Equations and boundary Value Problems (sixth edition) by Nagle, Saff, Snider

Office Hours: Monday, Wednesday, Friday 11:40- 12:40
(or by appointment)

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Homework

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Jokob Bernoulli	Johann Bernoulli	Cauchy	Euler

Topics

Introduction
  What is a differential equation
  Ordinary - partial; linear - nonlinear
  Order of a differential equation
  Exact vs a numerical solutions to a differential equation
  Existence and uniqueness of first order ODEs
  Direction fields

First Order Differential Equations
  Separable DEs
  Linear DEs
  Exact DEs
  Bernoulli equation,substitution methods

Mathematical Models involving First Order Equations

Numerical Methods for First Order Equations
  Euler method, Improved Euler method
  Big O notation, convergence, order of a method

Linear Second Order Equations
  Spring problems
  Constant coefficients - homogeneous
  Constant coefficients - non-homogeneous
  Non-homogeneous case
  Undetermined coefficients

Laplace transform methods
  Laplace transform and the inverse
  Solving initial value problems
  Laplace transform of discontinuous functions, periodic functions, Dirac Delta function
  Convolutions

Systems of Equations
  Elimination method
  Phase plane

Messages

Welcome to Differential Equations

Free tutoring at the Teaching Center, SW Broward Hall. Check www.teachingcenter.ufl.edu for the time schedule.

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

The course will be conducted in accordance with the University honor code, academic honesty policy, and policy regarding the use of copyrighted material.

"Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx."

Information on current UF grading policies for assigning grade points
may be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Grades

  three exams 30%
  homework 10%

(not recommended)

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