



Differential Equations

MAP 2302 – 5590
Fall 2016



Time: MWF period 3
Place: Little 219
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Textbook: Fundamentals of Differential Equations (8th edition)
by Nagle, Saff, Snider

Office Hours: Monday, Wednesday, Friday period 6
(or by appointment)

Links

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Homework

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

Mathematical Models

First Order Differential Equations

- Separable DEs
- Linear DEs
- Exact DEs
- Bernoulli equation
- Substitution

Modeling with First Order Equations

- Logistic equation

Linear Second Order Equations

- Spring problems
- Constant coefficients - homogeneous
- Constant coefficients - non-homogeneous
- Variation of parameters
- 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

- 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% each
homework	10%

(not the recommended method for remembering formulas)

