



MAP 2302 – 5592
Fall 2017



Time: MWF period 3
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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)

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Homework

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Page 12 #3,9,14
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Page 43 #17-26 (do any 5 of them), 33,34
Page 52 #17-21,33,35
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Page 173 #2,3,21,22,23 (due Mon Oct 17)
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Page 360 #9,17,18,23,24,29bcd
Page 365 any 8 of the problems:1-20 (due Mon Nov 7)
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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

Population models - logistic equation
Mixing problems
Newtonian mechanics
Heating and cooling

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, equilibrium solutions, trajectories
Classification of critical points

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, each of equal weight

(not the recommended method for remembering formulas)

