

Ordinary Differential Equations

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Text: William Boyce, Richard DiPrima, "*Elementary Differential Equations And Boundary Value Problems*".

Introduction: The main reason for solving differential equations is to try to understand an underlying physical process that the equation is believed to model, such as the motion of fluids, the flow of current in electric circuits, the increase or decrease of populations etc.. In the text many interesting and important problems will be discussed. This course will introduce a variety of tools, both analytical and numerical, to obtain solutions; however, the solution is not an end in itself. We also emphasize two principal questions: (1) How do we derive a differential equation to model real world problems? (2) How do we understand the differential equation after we solve it?

We note that the numerical solution of differential equations is a central activity in science, and students are encouraged to use a computer algebra system to solve some problems assigned in class.

Chapter 1-4 of the textbook will be covered in this course.

Homework: Your homework average will be determined from all the assignments given over the course. **Late homework is not accepted.**

Exam: There are two exams, including the Final exam. The midterm exam is scheduled on April 21st.

Grading Policy: The final grade will be determined by your performance on the homework and the four exams, according to the following algorithm:

Homework: 30%

Midterm Exam: 35%

Final Exam: 35%

Attendance: Every student is responsible for everything that occurs in our classroom during every class period. Whether you attend is your choice. If you miss any announcements, any handouts, any assignments given, or any material covered, it is your responsibility.