

**MthSc 208, Introduction to Ordinary Differential Equations  
Fall 2010**

**MWF 8:00-8:50am Martin Hall M-104  
T 8:00-8:50am Martin Hall M-301**

**General information**

Instructor: Dr. Matthew Macauley  
Email: [macaule@clermson.edu](mailto:macaule@clermson.edu)  
Web: <http://www.math.clemson.edu/~macaule/>  
Phone: (864) 656-1838  
Office: Martin O-325  
Office hours: (subject to change!) MWF 9:00-10:00, and by appointment  
Text: *Differential Equations: An Introduction to Modern Methods and Applications* by Brannan and Boyce.  
Web: I will post course material on my website and/or Blackboard.

**Objectives**

By the end of the semester, students will to be able to:

1. Explicitly solve a variety of 1<sup>st</sup> and 2<sup>nd</sup> order ODEs.
2. Understand how ODEs arise in modeling in biology, physics, chemistry, engineering, and finance.
3. Understand the connections between solutions to ODEs and direction fields.
4. Have a basic understanding of linear algebra and its role in the study of ODEs.
5. Take a Laplace transform and use this to solve certain ODEs.
6. Derive the Fourier series of a periodic function.
7. Solve basic PDEs, and recognize the differences between the heat, wave, and Laplace equations, as well as different boundary conditions.
8. Explain in simple terms, e.g. to grandparents or to younger siblings, how differential equations are relevant to several familiar settings in your major.
9. Be *well-prepared* and *confident* to succeed in your upper-division math, science, and engineering courses.
10. ... and much much more!

## Grading

Final grades will be determined by the following rubrik:

Homework	25%
Midterm 1	25%
Midterm 2	25%
Final exam	50%

- ▶ Your lowest midterm grade, or half the weight of your final exam, will be dropped. Make-up exams will be given **ONLY** with an official written excuse in advance, and will not necessarily be the same as the regular exam.
- ▶ If you get an A or B on the final exam, then your final grade in the course will be **AT LEAST** the grade you earned on the final exam, *as long as you (i) attend class regularly, AND (ii) maintain a passing grade on the homework.*

Letter grades will then be assigned by:

$$A \geq 90\% > B \geq 80\% > C \geq 70\% > D \geq 60\% > F$$

Homework assignments will accumulate from lecture to lecture and will be due roughly three times a week. I will post the assignments on my website. Late homework will *not* be accepted. If you cannot attend a class period for which homework is due, please make arrangements to have the homework delivered to me before the start of the class in which the homework is due. Also, if you miss a class, assume that some homework relevant to the missed class was assigned, and ask around or check online.

## Midterm dates

Midterm 1:	Friday, September 17 <sup>th</sup> (in class)
Midterm 2:	Tuesday, November 9 <sup>th</sup> (in class)
Final:	TBA.

## Attendance

Attendance on test days is mandatory. On other days, I will take attendance, and it will factor into your homework grade. Students may leave after 10 minutes if the professor or a guest lecturer does not arrive in that time.

## Laptops, cell phones, PDAs

All use of cell phones, and typing on laptops is prohibited during lecture. Calculators, cell phones, laptops, and PDAs will not allowed during exams.

## **Academic integrity**

As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a high seminary of learning. Fundamental to this vision is a mutual commitment to truthfulness, honor and responsibility, As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a high seminary of learning. Fundamental to this vision is a mutual commitment to truthfulness, honor and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form."