MthSc 208: Introduction to Ordinary Differential Equations
Summer Session II, 2012
Martin Hall M-203,   MTWRF 7:30-9:40am

Instructor	Matthew Macauley (`macaule@clemson.edu`) OFFICE: Martin Hall O–325 PHONE: (864) 656–1838 OFFICE HOURS: MWF 9:45–11:20, or by appointment WEBSITE: `http://www.math.clemson.edu/~macaule/classes/s10_mthsc208/`
Textbook	*Differential Equations: An Introduction to Modern Methods and Applications* by Brannan and Boyce.
Prerequisites	MthSc 206 (Vector Calculus).

Policies

- Attendance: I will take attendance. If you miss a class for some reason, it is your responsibility to get notes, etc. from someone in class. I will not repeat lectures during my office hours. I prefer to know in advance if you cannot make a lecture, and may give you an excused absense if you inform me at least 12 hours before class.

- 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 very regularly, AND (*ii*) maintain a passing grade on the homework.

- If you want to know your grade at any point during the semester, consult the grading rubric below.

- All drop/add procedures are your responsibility.

- Absent Professor Policy: If the instructor has not arrived within 15 minutes of the scheduled class time, you may assume that class has been canceled.

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

- Cell phone policy: `http://www.youtube.com/watch?v=FYwpxU_G4Z0`

Learning Outcomes

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

- Explicitly solve a variety of 1st and 2nd order ordinary differential equations (ODEs).

- Understand how ODEs arise in modeling in biology, physics, chemistry, engineering, and finance.

- Understand the connections between solutions to ODEs and direction fields.

- Have a basic understanding of linear algebra and its role in the study of ODEs, and how to solve systems of linear ODEs.

- Take a Laplace transform and use this to solve certain ODEs.

- Derive the Fourier series of a periodic function.

- Be able to solve partial differential equations (PDEs), and recognize the differences between the heat, wave, and Laplace equations, as well as different boundary conditions.

- Explain in simple terms, e.g. to grandparents or to younger siblings, how differential equations are relevant to several familiar settings in your major.

- Be *well-prepared* and *confident* to succeed in your upper-division math, science, and engineering couses.
- ...and much more!

Grading   The final grade will be calculated as follows:

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.

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

Homework   Homework assignments will accumulate from lecture to lecture and will be due roughly once or twice a week. I will post the assignments on my website. Students can collaborate on their homework problems, but they *must* write up and submit their homeworks separately. Late homeworks will **not** be accepted, but anyone typesetting their homework using LaTeX will get an extra 24 hours to complete it (okay to hand-draw pictures, though). You should keep all the graded homeworks in case of missing grades due to missing name or typo errors.

Key Dates
June 30 (Wed)	Classes begin; late enrollment fee applies
July 1 (Thu)	Last day to register or add a class
July 5 (Mon)	Holiday
July 6 (Tue)	Last day to drop a class or withdraw from the University without a W grade
July 10 (Sat)	Classes meet
July 16 (Fri)	Last day to drop a class or withdraw from the University without final grades
August 4 (Wed)	Final Exam
August 7 (Sat)	Commencement

The official statement on 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, 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.

When in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member shall make a formal written charge of academic dishonesty including a description of the misconduct, to the Dean of the Graduate School. At the same time, the faculty member may, but is not required to, inform each involved student privately of the nature of the alleged charge.