Math 332 – Differential Equations II
Fall 2019; Section 101

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Office hours. TR, 9:00am-noon, or by appointment
Class schedule. TR, 2:00-3:15pm, in MSPB 345.

Overview. This course is a continuation of Differential Equations (MA 238). Topics include systems of linear differential equations, nonlinear differential equations and stability, power series solutions of linear equations, partial differential equations and Fourier series, and Sturm-Liouville problems.

Learning objectives. Many important and significant problems in the mathematical, natural and engineering sciences, when formulated quantitatively in mathematical terms, lead to ordinary differential equations (ODEs) and partial differential equations (PDEs). In this course, we shall extend the theory of differential equations from the course Differential Equations (MA 238), and explore new solution techniques.

Textbook. *Fundamentals of Differential Equations and Boundary Value Problems*, by R. Kent Nagle, Edward B. Saff, Arthur David Snider (Pearson, 7th Ed., 2018)

Course format. Web-enhanced.

Pre-requisite. C or better in Calculus III (MA 227) and Differential Equations (MA 238).

Grading

Exams. There will be two in-class midterm exams and a comprehensive final exam. Notes, books, calculators or computers are not allowed during any of the exams or quizzes.
Our **tentative** exam schedule is:

- Midterm Exam 1: Tuesday, October 1
- Midterm Exam 2: Tuesday, November 12
- Final Exam: Tuesday, December 10 — 1:00pm-3:00pm

Homework. After most classes, homework will be posted to our course website. Homework is submitted online, and you have an unlimited number of attempts (a 15% penalty applies if homework is submitted after the posted due date). Only the best score is used for your grade. Most problems have a random component (which allows you to continue practicing throughout the semester without putting your scores at risk).

(The homework system is written by myself in the hope that you find it beneficial. Please help make it as useful as possible by letting me know about any issues!)

Quizzes. Short quizzes will be given when certain milestones are reached. These will be announced in class a week in advance. The lowest quiz score will be dropped.

Grades. Your grade will be based on the total sum of your scores on the midterm exams, homework, quizzes, and the final exam.

- Midterm Exams: 40% in total
- Homework: 20%
- Quizzes: 15%
- Final Exam: 25%

The resulting numerical score is then translated to your semester grade as follows:
$[90, 100]$: A, $[80, 90)$: B, $[70, 80)$: C, $[60, 70)$: D, $[0, 60)$: F.

Bonuses. You can earn bonus points by finding mathematical typos in the lecture notes, or by reporting mistakes in the homework system. Each bonus point is worth 1% towards a midterm exam.

Make-up policy. There will be no make-ups for missed midterms or quizzes. Missed quiz scores are dropped if a valid excuse is presented. If a midterm is missed and appropriate documentation (e.g. a doctor's note) is presented in a timely manner, then the corresponding exam score will be replaced with the final exam score. Otherwise, the score for the missed exam will be recorded as zero.

Online grades. Grades will be posted to USAonline. Please check your grades after each exam at `https://ecampus.southalabama.edu` and report any discrepancies within two weeks.

Dropping. The final drop date is Friday, October 25. Please speak with me (and/or your advisor) before making a final decision to drop. Ideally, talk to me as soon as you are getting behind, so I can help you complete the course successfully.

Course organization

Online material. This syllabus as well as relevant information and material for this course can be found at our course website. In particular, homework and sketches of each lecture will be posted there.

Attendance. Attendance of all lectures is mandatory and roll will be taken. You are responsible for finding out what you missed on days when you were unable to attend.

Let X be the number of times you miss class without excuse throughout the semester.

- If $X \leqslant 3$, then your lowest exam score is replaced with the final exam (if beneficial).
- If $X > 6$, then your overall semester grade will be decreased by a full letter grade.

Students are expected to be on time in class. Frequent late arrivals of a student to the classroom will be considered a disruption and a penalty may be applied in this circumstance.

Cell phones and other electronic devices. The use of cell phones and other electronic devices, such as laptops, is not acceptable during lecture and is reserved for emergencies.

Changes. Not all classes progress at the same rate. Thus course requirements and policies might have to be modified as circumstances dictate. You will be given notice if the course policies need to be changed.

Additional Academic Course Policies. Information on Student Disability Services, Academic Disruption Policy and Class Demeanor, Student Academic Conduct Policy, Operational Disruptions, and other university policies are posted on USAonline.

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Welcome!

...please ask anytime if you have questions.

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