COURSE DESCRIPTION
INTRO DIFFERENTIAL EQUATIONS
MA 252-2A, 46506
SPRING 2026

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Professor Yanni Zeng
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Office Hours: Tue Thu, 3:30-4:30 PM (or by appointment)

Meeting times: Tue, Thu 8 – 9:15 AM
Meeting location: HHB 221
Prerequisite: Grade of C or better in MA 126 or MA 226
Credits: 3 semester hours
Textbook: *Fundamentals of Differential Equations* by Nagle-Saff-Snider, Pearson, 9th edition (MyLab Math with Pearson eText – 18 Week Standalone Access Card).

- This course participates the UAB Bookstores First Day program. *The deadline to opt-out for the First Day program is January 21, 2026 11:59 PM.* For more information please see
  https://www.uab.edu/elearning/academic-technologies/first-day-access
- You can access your digital course materials through Canvas. First-time users will need to create an account with the publisher. Please see the page attached to this syllabus for registration instructions.

Important dates:

First day of classes: Jan 12
Martin Luther King Holiday: Jan 19
Last day to drop without paying full tuition: Jan 20
Extended drop period: Jan 21 – Feb 25
Spring Break: Mar 9 –15
Last day to withdraw with a "W": Mar 27
Last day of class: Apr 24

Date: January 7, 2026.

Major exams (tests): Test I: near Thursday, February 19;
Test II: near Thursday, April 16.
(These dates are approximate and may be slightly shifted due to unforeseen circumstances.)

Final exam: Tuesday, April 28, 2026, 8 AM – 10:30 AM

Course policies:

- Please make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.
- If your are contacted by the Early Alert Program, you should consider taking advantage of the services it offers. Various services to assist you are also listed in the *Student Resources* section of the *Blazernet* web site.
- If you wish to request a disability accommodation please contact DSS at 934-4205 or at *dss@uab.edu*.
- The two lowest quiz grades and the five lowest homework grades will be dropped to account for any missed assignments due to illness or any other circumstance. If a test is missed due to a serious verifiable circumstance or official university business, the test grade will be replaced with the final exam score. Otherwise, if you miss an exam you will receive a zero score for this exam. In the unlikely event when two midterm tests are missed due to a serious verifiable circumstance or official university business, the matter will be resolved on the case by case basis. In any case you **must** inform your instructor of such circumstances **before** the exam takes place.
- Calculators (without internet access) will be allowed during any of the tests or quizzes. In addition, students can bring one quick reference card to tests, including the final exam (i.e., a standard size $5'' \times 8''$-index card; both sides can be used).

Methods of teaching and learning:

- Class meetings of 75 minutes consisting of lectures and discussions of examples and homework problems. Time also includes quizzes and two in-class tests.
- Students are expected to undertake at least 7 hours of private study and homework per week.
- MyLab platform from Pearson will be used for online homework.

Assessment procedures:

- Student achievement will be assessed by the following measures:
  - **Regular online homework** (usually due on Tuesdays before class). There will be NO EXTENSION FOR HOMEWORK DEADLINES! Feedback is provided when wrong answers are given. Three attempts are allowed for each question, so make sure that you are fairly confident in your answers before you input them. Homework contributes 15% to the course average. Problems on tests are modeled after homework problems. Staying on top of homework is therefore extremely important.

  - **Weekly quizzes** (usually during Tuesday classes). There will be NO MAKEUP QUIZZES! Quiz problems are similar to the homework problem sets. This allows students to gauge whether they are ready to work problems in a test situation. Quizzes contribute 15 % to the course average.
  - **Two in class tests.** Partial credit is awarded where appropriate. Each test contributes 20% to the course average.
  - **A 150-minute comprehensive final examination.** The final exam will be cumulative, i.e. it will test on all the material. The final exam contributes 30% to the course average.
- Your course performance is your course average (including the final exam score). This is a number between 0 and 100.
- Your final grade is determined according to the following table:

Course performance:	88-100	75-87	62-74	50-61	below 50
Final Grade:	A	B	C	D	F

Learning Outcomes: Students will learn the following:

- concepts related to differential equations, including direction fields and approximation method of Euler;
- solving first order differential equations, including separable, linear and exact equations;
- building mathematical models using first order differential equations, with applications in compartmental analysis and Newtonian mechanics;
- solving second order linear differential equations and learning their properties, including equations of constant coefficients, homogeneous and non-homogeneous equations, equations with variable cofficients, the methods of undetermined coefficients and variation of parameters;
- solving first order linear systems of differential equations by elimination method and by numerical methods.

Title IX Statement: The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit the UAB Title IX webpage for UABs Title IX Sex Discrimination, Sexual Harassment, and Sexual Violence Policy; UABs Equal Opportunity and Discriminatory Harassment Policy; and the Duty to Report and Non-Retaliation Policy.