

UNIVERSITY OF TENNESSEE KNOXVILLE-FALL 2022
MATHEMATICS 231 (Section 7)- DIFFERENTIAL EQUATION-SYLLABUS

LOCATION, TIME: Ayres Hall 120, Tu&Th 14:30—15:45

INSTRUCTOR: Dr. Alex Freire (PhD 1988; at U.T.K. since 1991)

Web page: <https://web.math.utk.edu/~freire/>

OFFICE: Ayres Hall 325, email: afreire@utk.edu

Office Hours: Tu 15:45—16:30 (or by appointment)

Course description: Introduction to ordinary differential equations , with one-variable Calculus as prerequisite. Topics include: linear and nonlinear first-order equations, linear second-order equations and applications, solution by power series, Laplace transform, first-order systems.

Text (required): *Fundamentals of Differential Equations*, by Nagle, Saff and Snider (Ninth edition). Coverage: sections from Chapters 1—4, 7, 8.

Optional Text: *Ordinary Differential Equations*, by Tenenbaum and Pollard (Dover)

Homework: suggested homework problems from the text will be given for each section covered (between 8 and 10 problems on most weeks). Homework will not be collected; instead, there will be *quizzes* approximately every week, consisting of selected homework problems.

Grading: there will be two in-class tests during the semester. The course grade will be based on quizzes (30%), test grades (20% each) and a comprehensive final exam (30%). The first test covers chapters 1,2,3, the second covers chapter 4 and part of Ch. 7.

Expected grading scale: 55-69: C,C+ 70-84: B-,B,B+ 85 and higher: A-, A. I do not grade 'on a curve' (a student's grade is independent of how the class as a whole performs.)

Course policies:

1.Attendance to every lecture is expected.

2. **Classroom Expectations/Etiquette:** every student is expected to maintain an atmosphere that fosters a positive learning environment. During class, this means turning off cell phones and refraining from doing anything not related to the class. Please keep late arrivals to a minimum, as they are a distraction to the instructor and students.

3. Students must be familiar with the *academic standards of conduct* section of the *Hilltopics* handbook.

4. All information about the course (HW problems, topics covered, handouts, instructions to students) will be posted on the **course log**, linked to the course page: <https://web.math.utk.edu/~freire/teaching/m231f22/m231f22index.html>

Use of Canvas for this class will be kept to a minimum

5. There will be no “extra credit” assignments.

6. Students with disabilities: please contact the Office of Disability Services (974-6087 V/T) if you need special arrangements to take this class.

Recommendations:

1. Do not fall behind: this is a fast-paced course, with a lot of material to be covered. If you fall behind, it will be difficult to catch up.

2. Read the text carefully, preferably in advance of when the section is covered in lecture. In class I will emphasize the “big picture” and examples. You may find it helpful to take notes.

3. Ask questions if there is something you don’t understand, or need help with a homework problem—in class or during office hours.

4. Student feedback: there will be a short in-class survey shortly after the first test, but students are invited to offer constructive criticism or suggestions in person, at any time.

DATES (28 lectures):

First Day: Thursday Aug. 25

Midterm I: Thursday Sep. 29 (likely)

Fall Break: Thursday Oct 6

Midterm II: Thursday Nov. 3 (likely)

Thanksgiving: Thursday, Nov. 24

Last Day: Tuesday, Dec. 6

Final Exam: Tuesday, Dec. 13, 1:00-3:15