Math 353 Section 1 Elementary Differential Equations Course Syllabus Spring 2023

Instructor: Dr. Cong Zhou

Office: 333 Hume Hall

Office Hours: By appointment

Class Meeting Times: 1/23-5/12 M W F 11:00A - 11:50A

Final Exam: Monday, May 8, Noon - 3:00P.

Lectures and exams are all in Turner Room 205 (Auditorium).

COURSE CONTENTS AND GOALS: This course is an introduction to ordinary differential equations. We intend to cover Chapters 1, 2, 4, and 7 of the textbook, plus a few topics from other sections. This includes equations of first and second order; linear differential equations of higher order; and the Laplace transform.

TEXTBOOK: D. G. Zill, A first course in differential equations with modeling applications (classic 11th edition), Brooks/Cole 2019. ISBN: 978-1-305-96572-0
This course will cover sections:

1.1, 2.2, 2.3, 2.4, 2.5
4.1, 4.2, 4.3, 4.4, 4.6, 4.7
7.1, 7.2, 7.3, 7.4, 7.6

THE GRADE FORMULA: The cumulative point total for the course is 600 points - midterm tests: 100, homework: 180, final exam: 140 and class participation and attendance 180. The following point scale will be used to determine your final grade. An "I" grade will not be given without the permission of the Department of Mathematics.

Grade	Percentage
A	93 – 100%
A-	90 – 92.99%
B+	87 – 89.99%
B	83 – 86.99%
B-	80 – 82.99%

Grade	Percentage
C+	77 – 79.99%
C	70 – 76.99%
D	60 – 69.99%
F	0 – 59.99%

DATES AND TIMES FOR EXAMS:

- Exam 1 (Midterm): March 3, Friday, in class
- Final Exam: see above

The use of calculators is not permitted in any exam or quiz in this course.
You should mark these dates and times on your calendar. If you will not be able to take the exams at these times, you should drop the class and take it another semester. No makeup quizzes or exams will

be given. The lowest test grade will be replaced by the final exam percentage (if it is higher). If one requests to reschedule the test by texting, email, or oral communication, then the grade replacement policy will not be applicable for that student (i.e. the grade from every test will be counted to the total score).

ON BEING A GOOD STUDENT: A few college students do not realize that certain behaviors are not appropriate in a university class. This includes

1. arriving late or leaving early without notifying the professor ahead of time,
2. using any electronic device (phone, texting, web surfing) during the lecture,
3. reading the newspaper,
4. eating in class,
5. whispering to a classmate,

If you must leave early or come late, please let the professor know ahead of time so that arrangements can be made to minimize the impact on the lecture. Students who violate these rules will be penalized 2% of the final grade for each occurrence. *Make sure you do not come to class late, and make sure your phones are turned off and put away before the lecture starts.*

HOMEWORK POLICY: There will be nine homework, each worth 20 points. The homework problems are assigned on the GradeScope and graded online at www.gradescope.com. Once you have created an account at GradeScope, to access our course, you need to input the Entry Code: **G2J2B7**. To submit your answer to a homework, you will need to scan your written solutions and upload them to GradeScope in pdf format. CamScanner is a free phone app that allows you to scan documents in pdf and other formats.

In recent years, students have gotten used to looking up solutions to homework on the internet, or copying from their classmates. However, *it is impossible to learn the material in a 300-level math course without doing a large number of homework problems.* One of the Blackboard announcements for this class will be titled "Suggested Homework list." This list will contain the bare minimum number of problems that every student who wishes to get a good grade in this class must know how to solve. It is in your interest to work through the problems without looking up solutions. In my experience, a student's final grade in this course is directly correlated to how many problems they solve on their own. To emphasize this point: *if you do not do all the problems, do not expect a good final grade.* Math 353 is much more problem-solving than any previous math course you may have taken, so grades in earlier courses are not a good predictor of your grade in this course. *You cannot learn the material only by attending class.*

LAST DAY TO REGISTER OR ADD CLASSES (REFUND PERIOD ENDS): Friday, February 3
WITHDRAWAL DEADLINE FOR SPRING 2023 SEMESTER: Friday, March 10.

ACADEMIC HONESTY: Cheating on any exam or quiz, theft or attempted theft of exam questions, possession of exam questions prior to the time for examination, or the use of an illegal calculator/smart phone on tests or quizzes shall all be offenses subject to appropriate penalties.

Tentative Test and Homework Schedule:

Exam 1 (03/03, Friday, in class)	**Final Exam (05/08, Monday, Noon)**
Chapters 1 and 2 **1.1 Introduction** **2.2 Separable Equations** **2.5 Homogeneous Equations** **2.4 Exact Equations** **2.3 Linear Equations** **2.5 Equations of Bernoulli** **Chapter 4** **4.1 Preliminary Theory** **4.2 Constructing a Second Solution from a Known Solution** **4.3 Homogeneous Linear Equations with Constant Coefficients**	**Comprehensive + Chapters 4, 6 and 7** **4.4 Undetermined Coefficient** **4.6 Variation of Parameters** **4.7 Cauchy-Euler Equation** **7.1 Laplace Transform** **7.2 Inverse Transform and Transforms of Derivatives** **7.3 Translation Theorems** **7.4 Derivatives of a Transform, Transform of Integrals, and Periodic Functions** **7.6 Applications**
Homework Due Dates **TBA**	