

Math 2C: Differential Equations Section #40304, Spring 2017

Instructor: Jennifer Nari **Office:** MA 112 **Office Hours:** MW 2:30 – 3:30, TTh
12:30-1:30, F by appointment, in MA 112
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Class Location and Time: MW 12:55 – 2:20 p.m. in MA 102

Text: Differential Equations with Boundary-Value Problems, 8th edition, by Zill/Wright, 2013

Prerequisite: Math 1C, or equivalent, with a grade of “C” or better.

Calculators: In this course we will concentrate on understanding the concepts of differential equations. There will be instances when we will use the calculator or computer to aid in our understanding or remove some of the tediousness of the calculations (especially in the area of numerical approximations). No calculators with CAS (Computer Algebra Systems) will be allowed on exams.

Course Description: An introductory course in differential equations that covers: first-order differential equations including separable, linear, exact, homogeneous, Bernoulli and Euler's Method; second-order differential equations including homogeneous, nonhomogeneous, variation of parameters, method of undetermined coefficients and reduction of order; series solutions to differential equations; Laplace Transforms; linear systems; and if time, Fourier Analysis; and applications thereof.

Course Learning Outcomes: The student will demonstrate the ability to

- Formulate, analyze and solve differential equations of first, second, and higher order equations involving linear, separable, exact, homogeneous, linear systems, Euler's numerical, method of undetermined coefficients, variation of parameters, reduction of order, Laplace Transforms, series solutions, and Fourier Analysis
- Solve applied problems encountered in engineering, physics, and other physical sciences, working both in groups and individually.
- Use the Existence and Uniqueness Theorem to determine whether a solution to a differential equation exists and is unique.
- Compute the Wronskian to determine whether two solutions are dependent or independent.
- Use technology to find numerical approximations to differential equations and to analyze differential equations problems and solutions.

Attendance: You are expected to attend all class meetings and complete all assignments. Punctual daily attendance is required for success in this class. Come to class *on time* ready to learn and work for the entire class period. **Turn off phones and keep them out of sight.** “Students missing one more class hour than the unit value for a particular course, without making prior arrangements may, at the instructor’s option, be dropped without possibility of credit.” *It is the responsibility of the student to drop the course.*

Homework: Each week’s homework will be collected on the first class day of the following week. The homework packet will be graded for completeness, presentation, and correctness. You are expected to check your answers to all odd problems in the back of the book. Each homework packet will be worth 5 points. **A maximum of 65 points will be counted toward your final grade.** Please see the Homework Protocol handout for more information.

Quizzes: Several 10-point take-home quizzes will be given throughout the course. You are allowed to get help with the problems and discuss them with your classmates but all work must be your own. **A maximum of 50 points will be counted toward your final grade.**

Exams: There will be three exams to test your understanding of the concepts from lecture and the homework. They should be straightforward for those who complete and understand the homework. Each exam will be worth 125 points. **A total of 375 points will be counted toward your final grade.** A required “Error Analysis” worth 20 points each will also follow each exam. See the schedule for the date and coverage of each exam. All exams are to be taken on time. **No make-up exams will be given.** If you are forced to miss an exam, you must contact me **before** the exam with a valid and verifiable reason.

Final Exam: A comprehensive two-hour final exam worth 200 points will be given on:

Wednesday, May 24, 10:30 a.m. – 12:30 p.m.

No Exceptions!

Grading Policy:	Homework	Maximum of	65 points
	Quizzes	Maximum of	50 points
	Exams	3 @ 125 pts	375 points
	Error Analyses	3 @ 20 pts	60 points
	Final	1 @ 200 pts	200 points
	Total		750 points

Your grade will be computed as a straight average: the total number of points earned divided by the total points possible. Please keep all of your graded papers.

Student Honesty Policy: “Students are expected to exercise academic honesty and integrity. Violations such as cheating and plagiarism will result in disciplinary action which may include recommendation for dismissal.”

Special Needs: “Students requiring special services or arrangements because of hearing, visual, or other disability should contact their instructor, counselor, or the Disabled Student Services office.”

Important Dates:

- Last day to add – Friday, February 12
- Last day to drop with a refund – Sunday, February 14
- “NRS” Deadline – Sunday, February 14
- “W” Deadline – Friday, April 29

Recipe for Success:

- If you ever have any questions, COME TALK TO ME! I am here to help you so please take advantage of my office hours.
- Visit the Math Lab (MA 101)
- Form a study group.
- Attend all class meetings and DO YOUR HOMEWORK!
- Read the sections to be discussed in class prior to the lecture.
- DO NOT FALL BEHIND!

You may want to keep a record of your scores.

HW		HW		Exam		Quiz	
1		8		1		1	
2		9		2		2	
3		10		3		3	
4		11		Error Analysis		4	
5		12		1		5	
6		13		2		6	
7		14		3		7	