

Loyola University Maryland  
Department of Mathematics and Statistics  
MATH 304 (Ordinary Differential Equations) - SPRING 2020

MA 304.01: MWF 12:00PM- 12:50PM, KH 305  
MA 304.02: MWF 01:00PM -01:50PM, KH 305

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**Instructor:** Dr. Prince Chidyagwai

**Office:** Knott Hall 301d

**Office Phone:** 410-617-2710

**Email:** pchidyagwai@loyola.edu

**Website:** <http://math.loyola.edu/~chidyagp>

**Office Hours:** (MWF 10:00 - 11:00 AM, MW 2:00 - 3:00PM and 4:00 - 5:00 PM) or by appointment

**Textbook:** Elementary Differential Equations and Boundary Value Problems, 11th Edition by Bryce, DiPrima and Meade

**Requisites:** *Prerequisite* - MA351 (Calculus 3)

**Course Description:** An introduction to ordinary differential equations. Techniques for solving and analyzing first and second order differential equations, both linear and nonlinear; systems of differential equations. Qualitative and numerical methods as well as closed form solutions are emphasized, and mathematical software (MATLAB) is used.

**Course Learning Objectives:** Upon successfully completing this course, the students should be able to:

1. Solve the following types of differential equations/initial value problems by analytic means: first order separable, first order linear, exact, second order homogeneous with constant coefficients, second order non-homogeneous constant coefficients
2. Model certain simple physical phenomena with first and second order differential equations.
3. Understand what it means to solve certain differential equations graphically and numerically
4. Understand what it means to *analyze* the behavior of solutions of ODEs.

**Topics:** We will cover chapters 1 -7 (skipping chapter 4).

**Grading:** Homework - 25%, Semester Exams - 45% Final Exam - 30% Final grades will be determined according to the following scale:

93-100: A	90-92: A-	87-89: B+
83-86: B	80-82: B-	77-79: C+
73-76: C	70-72: C-	67-69: D+
60-66: D	0-59: F	

*Class participation and improving performance on the exams will be considered when assigning borderline grades.*

**Homework:** Homework will be assigned almost weekly in class and posted also posted on the course website. Answers without any justifications will not receive full credit. All work must include a detailed solutions to questions asked and printout of all codes and requested plots (if any). I do not accept late assignments without a documented reason. The lowest 2 scores will be dropped in computing your average homework score.

**Academic Integrity and Standards of Conduct:** The guidelines of academic integrity and standards of conduct are presented in the Undergraduate catalogue. The Loyola University Honor Code states that all students of the Loyola community have been equally entrusted by their peers to conduct themselves honestly on all academic assignments. In this class you may discuss homework assignments with your peers on assigned homework. However, you should write up your own solutions. Copying a classmate’s solutions or submitting solution obtained from online sources is **plagiarism**. The penalty for plagiarism is a zero on the assignment for a first offense and a grade of F for the course for the second violation. You may not consult your notes for quizzes or Exams. Please refer to the Community Standards Handbook for more information and further clarification of the honor code standards, type of violations, adjudication process, and sanctions that may be imposed for violations.

**Classroom Conduct:** Learning requires attention and focus in an environment free of disruption. Loyola’s code of conduct handbook defines disruptive behavior as “behavior which is disruptive to the living and learning of individuals inside and outside the classroom or of the University community or which disregards the rights of others”. Although silent, the use of technology for extracurricular purposes during class is highly disruptive to the instructor and classmates. It is rude, disrespectful, and distracts from learning. It interferes with access to an appropriate educational environment. In addition, numerous experimental studies have shown that personal technology use during class are casually related to poor performance in courses. As such, **this course has a strict ban on cellphones.**

**Extra Help:** Do not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course.

**Important Dates:**

Add/Drop Deadline .....	Thursday, January 17
Withdrawal Deadline .....	Friday, March 29
Exam 1 .....	Friday, February 21
Exam 2 .....	Friday, April 3
Final Exam MA304.01 .....	Saturday, May 2, 1:00PM
Final Exam MA304.02 .....	Friday, May 1, 1:00PM

**Student Athletes:** Please provide me with your athletic travel letters indicating when you will not be able to make it to class due to athletic commitments. You will be required to make up any assignments or exams that you miss.

**Learning Disabilities:** Any student with a disability documented with the Disability Support Service Office (DSS) requiring accommodations in this course is encouraged to contact me as soon as possible. If you have a disability that has not yet been documented, please contact the DSS Office (410-617-2602) for assistance.