

ELEMENTARY DIFFERENTIAL EQUATIONS 214
Fall 2020



Instructor: Dr. Carlos N. Rautenberg **Time:** Asynchronous
Email: crautenb@gmu.edu **Place:** Online

Office Hours: MW 9:30 am – 11:00 am or by appointment (via Zoom, link sent at 9:25am)

Textbook and material: We will cover chapters 1-4, 6-7, and 9 (some sections omitted) of

- Boyce, Diprima, Meade, *Elementary Differential Equations*, 11th edition, Wiley, 2020.

Objectives: To develop the ability to solve and analyze qualitative properties of first order ordinary differential equations (ODEs), second and higher order ODEs, and linear systems. To apply Laplace transforms for the resolution and analysis of ODEs, and to understand elementary notions of stability associated with nonlinear systems.

Prerequisites: MATH 213, or 215

TA: Mathew Hasty (mhasty2@masonlive.gmu.edu)

Homework and Projects: Problems will be assigned regularly throughout the semester. Students are expected to solve all the assigned problems, and submit them to be graded. Students are allowed to discuss assigned problems with classmates, but solutions should be written individually. *If you work in group, every member must disclose the names of all other group members in the first page of your homework.* Some problems will involve the use of Mathematica which is freely available in

<https://science.gmu.edu/information-technology/software-resources/wolfram-mathematica>

Tests: There will be two midterms, and a final exam.

Grading Policy: Each of the class tests counts for 25%, the graded homework and projects for 20%, and the final exam for 30%. Equivalence between scores and letters, recommended by GMU, is given in the table below

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>97	>93	>90	>87	>83	>80	>77	>73	>70	>60	60-0

Course Policy: Students are expected to watch all class videos regularly, and follow the class notes posted on Blackboard.

Makeup exams are only possible with an acceptable excuse. Examples of such excuses are religious holy days, family emergencies, school sponsored events, job interviews, or sickness. All absences require documentation. Notify me of any religious holy days within the first 2 weeks of the semester. Changing the date of the final exam for unusual circumstances, or because three or more finals are scheduled in one day, requires the approval from the professor at least a week prior to the last day of classes. If absence from the final exam is unexcused, the grade for the course is F.

GMU Policies: The University Catalog, <http://catalog.gmu.edu>, is the central resource for university policies in university academic affairs. Further policies are available at <http://universitypolicy.gmu.edu/>. All members of the university community are responsible for knowing and following established policies.

Honor code: Students are expected to follow the honor code <https://oai.gmu.edu/mason-honor-code/>. Lack of knowledge of the honor code is not a reasonable excuse for its violation.

Email Communication: When you email me, please use “MATH 214” as subject.