

George Mason University
MATH214 –Differential Equations
Course Syllabus – Spring 2021

Instructor: Dr. Amy Potrzeba Macrina

Instructor Contact Information: **Email:** amacrina@gmu.edu

Office Hours: WR 9:30a – 10:30a via Zoom, Mondays 9:30a – 10:30a by appointment only (also via Zoom)

Course Information:

SECTION # 001 [recitation: one of Tuesdays: 10:30a – 11:20a, 11:30a – 12:20p, 12:30p – 1:20p]

Please note that this course is asynchronous. However, **there are some scheduled due dates that you are expected to meet. It is important to stay on task and manage your time wisely! I will be available to meet for office hours or appointments via Zoom.**

Email: The best way to contact me is via email. **Please be sure to include your first and last name as well as course and section # in the body of the email.** I will respond within 24 hours Monday – Thursday. If you email me after 3pm on Friday, you will receive a response by Monday morning.

Mathematics Prerequisite: The prerequisite for this course is successful completion (C or better) of MATH 213 or MATH215.

Course Description: First-order ODEs, higher-order ODEs, Laplace transforms, linear systems, nonlinear systems, numerical approximations, and modeling. Offered by Mathematics. Limited to three attempts. Equivalent to MATH 216.

Course Objectives for Part B:

As a result of the learning experiences provided in this course, the student should be able to:

- Display a working knowledge of the terminology of differential equations.
- Solve first order differential equations using standard techniques.
- Solve linear differential equations with constant coefficients.
- Solve systems of linear differential equations using eigenvalues
- Solve applied problems

Textbook: Elementary Differential Equations and Boundary Value Problems, 11th edition, Boyce, DiPrima & Meade.

Calculator Policy: You will need a calculator for this course. Calculators with symbolic manipulation capabilities such as the TI-89 or TI-92 may not be used on quizzes or exams. Further, calculators are not to be shared during exams and quizzes.

Blackboard: The syllabus, class handouts, and announcements will be posted on Blackboard. Please check Blackboard regularly for any class related information as well as your student email, as announcements will also be sent to you via email. Grades for quizzes and exams will also be posted in the Blackboard Grade Center.

Class Attendance and Participation: You are expected to attend and participate in lecture. Since this course is mainly asynchronous you are expected to manage your time each week for the required lecture assignments. Please note that for every 3 hours of lecture you should be planning on spending 6 hours outside of lecture working on the course (studying, completing homework, etc.). With a mainly asynchronous course you should be planning to spend 9 hours outside of recitation each week on this course completing the required tasks and studying.

Course Format: This course is administered online. You can be expected to spend approximately 12 hours per week on this course. Typically, for every hour of lecture a student attends, two hours of work/studying outside of class is expected. You are expected to do as follows:

- Login to Blackboard each day and check for any new announcements as well as read and complete the tasks outlined in the weekly folder.

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- Homework is required but not graded. (More information provided in the homework section).
- Quizzes are required and are completed in recitation except for the Syllabus Quiz and Introduction Discussion Board Posting (Quiz Grade) that are in Blackboard.
- Video Lectures are in Blackboard. Please review the tasks within each weekly folder for assigned lectures.
- Exams are required, timed, and completed in Blackboard. (More information provided in the Exams and Final Exam sections).

Grading Policy: Your course grade will be computed as a weighted average using the following percentages:

Exams 50% (3 exams each 25%)

Quizzes 20%

Final Exam 30%

Grading Scale: Your letter grade will be determined as follows:

Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade
93 – 100 %	A	90 – 92 %	A-	87 – 89 %	B+	83 – 86 %	B	80 – 82 %	B-
77 – 79 %	C+	73 – 76 %	C	70 – 72 %	C-	60 – 69 %	D	0 – 59 %	F

Extra Credit: There is no extra credit. Please do not ask.

Exams: Two midterm exams will be given during the semester.

There will be **no make-up exams**. A missed exam counts as a zero unless a valid excuse from a physician or the Dean's Office is presented to your instructor and accepted. You need to contact your instructor as soon as possible regarding your extenuating circumstance for consideration of an exception.

You are not permitted to use any outside materials, resources, or electronic devices (including but not limited to non-approved calculators, mobile phones, smartwatches, etc.) on the exams. Any violation of this policy is a violation of the university's academic integrity policy.

Final Exam: The final exam is comprehensive and will be administered on **Monday May 3, 2021 in Blackboard**. The final exam is worth 30% of your grade. The date is already set by the university, so please do not make other plans on the date of the final exam such as appointments, early vacation departures, family outings, etc. Such changes are not negotiable. If a student has a conflict with another final exam, the student must contact his/her instructor at least two weeks in advance to have it resolved.

Completing Exams (including the final exam):

- Each of the exams (exam 1, exam 2, and the final exam) will be timed exams in Blackboard. You have 180 minutes (3 hours) to complete each exam.
- You will be required to show your work for each problem.
- You will be required to download, print, complete and upload the exam file. Once you begin the exam, the time does not stop, even if you close the assignment or sign out of Blackboard.
- The exam will be available from 12:00a – 9:00p on the exam date. The availability ends at 9:00p ET regardless of where you are in your time window, so plan accordingly to allow yourself the maximum allotted time.
- If you have provided your instructor with FCS accommodations that grant you extended time, then your instructor has adjusted your time accordingly. However, the exam availability ends at 9:00p ET regardless of where you are in your time window, so plan accordingly to get your maximum allowed time before the end of availability.
- You must complete the exam on your own.
- You will **not** be permitted use of any outside materials on the exams. A violation of this directive is a violation of the university's academic integrity policy.

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- Your exams need to be submitted as **one combined PDF** file. If you do not have access to a scanner you can get a free app such as CamScanner or AdobeScan that will help you convert your document to a PDF. Your solution file must be **one combined PDF file**. Alternate file types are not permitted. Multiple file uploads are not permitted.
- If you do not have access to a printer to print the exam files then to complete the exam you can use your own paper, but *your work must have the problems numbered in consecutive order and be neat and organized!*
- Each exam will contain an Honor (Academic Integrity) Statement that you are expected to follow and sign adhering to the policies. If you do not have access to a printer than you will need to write the Honor Statement and sign on your solution paper.

Homework: Homework will be assigned but not graded. The problems for each section will be posted by unit and section on Blackboard. These assignments will be an integral part of the course. Do not neglect them! The best way to learn this material is to work problems. You can check answers to the odd numbered problems in the appendix section of the textbook.

Quizzes: Quizzes will be administered in recitation and Blackboard. Quizzes will be given weekly.

- All quizzes can be worked on in the small groups assigned by your recitation instructor, but you must submit your own completed quiz for grading.
- There will be no make-up quizzes. If you miss a quiz you will earn a 0. If you have a documented, extenuating circumstance, please contact your instructor as soon as possible for consideration of an exemption.
- In Blackboard assessments that count as quiz grades including the Syllabus Quiz, Introduction Discussion Board Posting, and THREE Unit Discussion Board forum postings. See the discussion board in Blackboard for more details on each quiz assignment.
- Quizzes are 10% of your overall course grade.
- Your lowest one quiz grade will be dropped.

Late Assignment Policy: Late assignments will not be accepted. If you have an extenuating emergency/situation, please contact your instructor as soon as possible.

Inclement Weather: Check the university webpage in the event of inclement weather. In addition, please check your email and Blackboard for course specific information.

Students with Disabilities: George Mason University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. My goal as your instructor is to create a learning environment that are useable, equitable, inclusive, and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, I invite you to meet with me to discuss additional strategies beyond accommodations that may be helpful to your success. If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS). Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <https://ds.gmu.edu/>). Since accommodations may require early planning and are not provided retroactively, please contact ODS as soon as possible.

Academic Integrity: Mason shares in the tradition of an honor system that has existed in Virginia since 1842. Mason's Honor System was inaugurated in 1963 when the college was a satellite of the University of Virginia. The code is an integral part of university life. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Students are responsible, therefore, for understanding the code's provisions. In the spirit of the code, a student's word is a declaration of good faith acceptable as truth in all academic matters. Cheating and attempted cheating, plagiarism, lying, and stealing in academic matters constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty members must report all alleged violations to the Honor Committee. For more information and the complete policy, see <https://catalog.gmu.edu/policies/honor-code-system/> .

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Use of Student Work: In compliance with the federal Family Educational Rights and Privacy Act, registration in this class is understood as permission for assignments prepared for this class to be used anonymously in the future for educational purposes.

Important Dates:

- Last day to drop with 100% Tuition Refund: Friday 2/12/2021
- Financial Drop Deadline (50% Tuition Refund): Tuesday 2/16/2021
- Last day to withdraw without a grade penalty: Monday 3/1/2021
- Final Exam: Monday 5/3/2021

Tips for Success:

- Be proactive about your success in the course!
- Do not procrastinate!
- Attend every class and recitation.
- Ask questions whether it is during class, recitation, office hours, at the tutoring center or via email to your instructor.
 - The Math Tutoring Center is online in Blackboard. Join the MTC organization.
- Form a study group! Working together will help you and others better understand the course material as you can work through different difficulties and offer each other clarifications on concepts.

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Tentative Lecture Schedule:

Week	Sections Covered	Week	Sections Covered
Week #1 – Week of 1/25	1.1 – 1.3	Week #11 – Week of 4/5	7.2, 7.3
Week #2 – Week of 2/1	2.1, 2.2	Week #12 – Week of 4/12	Exam #2, 7.4
Week #3 – Week of 2/8	2.3, 2.4	Week #13 – Week of 4/19	7.5, 7.6
Week #4 – Week of 2/15	2.6, 3.1, 3.2	Week #14 – Week of 4/26	Review
Week #5 – Week of 2/22	3.3, 3.4	Week #15 – Week of 5/3	Final Exam
Week #6 – Week of 3/1	Exam #1, 3.5		
Week #7 – Week of 3/8	3.6, 3.7		
Week #8 – Week of 3/15	3.8, 4.1		
Week #9 – Week of 3/22	4.2, 4.3		
Week #10 – Week of 3/29	6.1, 6.2, 6.3		

- The dates for the midterm exams are as follows:
 - Exam #1: Wednesday 3/3/2021
 - Exam #2: Wednesday 4/14/2021

- The Final Exam is on Monday 5/3/2021.