MATH 123 008 Calculus Algebra/Trigonometry A **Spring 2022**

INSTRUCTOR

Catherine Sausville *Email:* **csausvil@gmu.edu**
Exploratory Hall - 4418

ONLINE OFFICE HOURS

Tuesday 10:30am-12:00pm
Thursday 10:30am-12:00pm

Zoom Link: https://gmu.zoom.us/j/96985823715

Please email me for in-person or alternate online appointments.

TEXTBOOK

The textbook is *Thomas' Calculus: Early Transcendentals*, 14^{th} edition, Thomas, Hass, Heil and Weir. We will be using the online homework system MyMathLab which also contains the ebook if you do not want a physical copy.

You will also need the companion workbook *"Just-in-Time: Algebra & Trigonometry for Early Transcendentals Calculus"* by Mueller and Brent, 4/e.

Since this course is an in-person active learning course you will need to attend class daily and participate in group activities. However at any point we could go online or have occasional days when we need to do remote learning. You are also expected to have a working internet connection, a microphone and a webcam. It is recommended that you have some kind of electronic tablet to write digitally such as an ipad, MS surface, wacom tablet etc.

PREREQUISITE & REGISTRATION

You must currently be registered in a Math 113 course (or have gotten prior permission) to register for this class. Please do not drop your current course. All registration for this class must go through Christine Amaya (camaya@gmu.edu). She will facilitate the dropping of your Math 113 course and the registering of the Math 123 course directly with the Registrar's Office. If you have not yet been in contact with her, please make sure to do that ASAP. We will not accept anyone new into the class after COB on Friday, March 4.

MATERIAL TO BE COVERED

Generally, Chapters 1-3 in the textbook.
The pace of the course is fast. A comfortable working knowledge of virtually all Appendix A material and content from Chapters 1 is assumed. The demands of the course will require a serious time commitment, in terms of both class attendance and homework time outside of class.

LEARNING GOALS AND OUTCOMES

Learning Goals and Objectives for the Math 123 & Math 124 Sequence

I. Students are able to interpret quantitative information (i.e., formulas, graphs, tables, models, and schematics) and draw inferences from them.
   (a) Students will understand how functions are represented by graphs.
   (b) Students will sketch graphs of polynomial, exponential and trigonometric functions, and interpret graph parameters.
   (c) Students will understand the relationship between the graph of a function and its inverse.
   (d) Students will identify the graph of the derivative of a function from the graph of the function itself, and do the same for the antiderivative of a function.

II. Given a quantitative problem, students are able to formulate the problem quantitatively and use appropriate arithmetical, algebraic, and/or statistical methods to solve the problem.

(a) Students will find the rate-of-change of a function (e.g., velocity) from the function itself (e.g., position) and find the function (e.g. position) from its derivative (e.g. velocity)

(b) Students will find relative maxima and minima of a function (e.g., maximize profit or area)

(c) Students will solve for the zeros of the derivative of a function

(d) Students will evaluate areas under curves and compute the net change in a function between two values of the independent variable.

III. Students are able to evaluate logical arguments using quantitative reasoning.

(a) Students will interpret quantitative solutions to problems for plausibility and accuracy

(b) Students will understand how to use various formulas for computing derivatives, and know why these formulas hold.

IV. Students are able to communicate and present quantitative results effectively.

(a) Student exams will be graded in part on clarity of presentation of work and not just on the final answer.

(b) Students may from time to time be asked to explain concepts qualitatively on exams and quizzes.

(c) If students are involved in group work they will be required to explain concepts to peers.

Learning Assistant

We are very lucky to have been assigned a Learning Assistant (LA) for this semester, Grace. She will be available weekly both in class and outside of class to help with questions and problems. Detailed hours will be posted on BlackBoard once they have been assigned.

Calculators

Because this course is designed to be half of Math 113, one of its primary goals is to help students acquire competence with basic algebraic and functional concepts and relationships. Accordingly, we will use calculators sparingly. I encourage you to attempt all homework problems without calculators, though some questions may require one.

Required Technology

We will be using the online learning system MyMathLab. To sign up, please go to the website mymason.gmu.edu and click sign-in using your GMU NetID. Click the **Math 123 Spring 2022** course link. On the left hand side there is a link for **MyMathLab**. In there click the link for the **MyLab/Mastering Course Home** and follow the instructions.

You are required to have signed up for MyMathLab by class on Friday, March 4.

At any point we could go fully online or have occasional days when we need to do remote learning. You are also expected to have a working internet connection, a microphone and a webcam. It is recommended that you have some kind of electronic tablet to write digitally such as an ipad, MS surface, wacom tablet etc.

Handwritten assignments, including the worksheets and/or exams will be uploaded to Gradescope. You will need a way to scan your documents and upload a single PDF. Alternative file types, or multiple files are not supported.

This course uses BlackBoard as the learning management system. You will need a browser and operating system that are listed compatible or certified with the BlackBoard version available on the myMason Portal. Log in to MyMason at mymason.gmu.edu to access this course.

MyMathLab

MyMathLab is a powerful online, homework, tutorial and assessment system that accompanies your new textbook. Students can take assessments, and receive personalized study plans based on their results. In many cases students can also access video clips, PowerPoint presentations, and other animations for each section and from selected exercises. MyMathLab is NOT a program operated by GMU. If you are experiencing technical difficulties using the program, then you can email or chat with Customer Support directly through the Pearson Education Customer Service website. You could also call the Pearson Customer Service and Technical Support number. DO NOT CALL THE GMU HELP DESK OR YOUR PROFESSOR!

Course Grades

Your final grade will be calculated as follows:

Participation	5%
MML Homework	15%
Worksheets	15%
Quizzes	10%
Tests (15% each)	30%
Final Exam	25%

Homework & Quizzes

Homework assignments will be listed on MyMathLab. The homework is broken into each section, however multiple sections may be due each week. Please pay attention to the due dates. Homework will be available on Monday at the beginning of the week and will be due on Sundays at 11:59pm.. For full credit you must submit your solutions to the homework during this designated time period. Homework submitted late will receive a 25% deduction.

Homework assignments are provided with a help menu which includes links to things like videos, practice problems, similar examples, and the link to the textbook section pertaining to the material. You will have unlimited chances to complete each homework problem, so if you miss a question please take advantage of these help menus. Two homework assignments will be dropped.

There will also be many worksheets assigned in this class. You are expected to work on these by hand, without the use of outside help. You may collaborate with your assigned group and with the LAs. Worksheets will be submitted in PDF form to Gradescope and you must show all work in order to get credit. Due dates will be given when the worksheet is assigned.

Quizzes will cover material from the homework as well as lecture and will be similar to homework problems. Quizzes will be given through MML a few times throughout the semester. You will get at least one week notice before a quiz is given. **If you do not that the quiz when it is open there will be no makeup for the quiz, no exceptions.** No quizzes will be dropped and quizzes will not be given on weeks where there is a test scheduled.

There will be multiple graded assignments every week. Whether it is a quiz, test or worksheet; you are responsible for all assignments and their due dates. Makeups will not be given for assignments that are missed.

Tests & Final Exam

There are 2 tests scheduled in this class. Tests will cover material from the homework as well as the lecture, however test questions will usually be more challenging that homework and quiz questions.

It is expected that students will take the test in class at the scheduled time. If you are unable to be in class on the day of a test you must ask me beforehand (by email only) so that I can determine if your situation warrants a make-up test. **Do not assume you will be given a make-up unless you get confirmation from me.** You must be able to validate your excuse

with documentation or you will not be allowed a make-up. The make-up test will be different and more difficult than the in-class test. You must make up the test by the next class period to receive full credit.

No collaboration is allowed on exams or quizzes. Any indication that you have worked together, used someone else's ideas, copied, or allowed a fellow student to copy your work is a violation of the George Mason Honor Code. Once you receive an exam or quiz, you are not allowed to leave the exam room until you are ready to turn the exam in.

Below is the tentative schedule of the tests, any changes will be announced in class or on Blackboard. Exact material to be covered on the tests will be determined the class before the test. The final exam will be cumulative.

Test 1	Wednesday, April 6
Test 2	Wednesday, April 27
Final Exam	Monday, May 11

These dates are tentative and subject to change.

PARTICIPATION

This course is designed to be a collaborative course. You are expected to be in class and to participate during every class period. This could be either answering questions during lecture, presenting problems to the class or working with your groups. If I find that students are not participating regularly then I will start assigning participation grades as part of your weekly quiz. To get participation credit for the week you must come to class on time, stay until all activities are completed and actively participate in group assignments. Students who are using their phones during group activities will not be considered as participating, with the only exception being the need of a calculator for very select activities.

HONOR CODE

THIS IS IMPORTANT. It is expected that each student in this class will conduct himself or herself within the guidelines of the Honor Code. Among other things, this means that sharing information of any kind about exams or quizzes (either before or during the exam) will result, at a minimum, in a grade of zero for all parties involved. All work must be your own and submitted by you as the student registered for the class. See academicintegrity.gmu.edu for a copy of the Honor Code.

CELL PHONES AND COMPUTERS

I expect to receive the same level of respect that I give to you. This means that cell phones and computers are not to be used during class. Your cell phone should be on silent or vibrate during lecture and I should not see them at all during tests or quizzes. If I notice you using a cell phone during a test or quiz then I will assume that it is an Honor Code violation and take appropriate action. This could result in you failing the assignment, failing the class or being suspended from the university.

OBTAINING HELP

There are many outlets available for you to get help in this class. This course is designed to ensure that students are able to keep up with the material, but that does require student communication. In addition to my set weekly office hours, I am very happy to schedule appointments. There will also be weekly LA office hours and a course Discord channel. Additionally, the Math Tutoring Center is available in person and remotely and is free to all Math 124 students. More information on how to access that tutoring can be found on their website, https://science.gmu.edu/academics/departments-units/mathematical-sciences/math-tutoring.

ACCOMMODATIONS

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services. All academic accommodations must be arranged through that office. Office of Disability Services Student Union Building I (SUB I), Room 4205 Phone: 703.993.2474

E-mail & Blackboard

E-mail is a vital form of communication for an online class. I frequently send announcements through email so make sure that you activate and check your GMU email account regularly. All students are required to use their George Mason email for communication and for MyMathLab. Please put Math 123 in the subject field anytime you send me an e-mail. If you want to discuss your grade via e-mail it *must* be done using your GMU e-mail account.

Unscheduled and Late Closings

If the university has an unscheduled closing-because of weather or some other unforeseen occurrence you should assume that we will pick up with the schedule where we left off. In particular, if a test was scheduled for a day in which school was canceled or an assignment was due that day you should assume that the test will be given or the assignment will be collected the next time class meets. If the university has a late opening on a class day we will begin class at the time the university opens. A test scheduled for a day the university opens late will be postponed until the next class day. Make sure you check your GMU e-mail account for any announcements.

It is possible that the university will transition to fully online, or that I will need to teach remotely, at some point during the semester. If this happens, we will still hold class synchronously and will endeavor to create an active learning environment as best as possible. Please be prepared for this to happen, just in case.