

# MATH-108– Introductory Calculus with Business Applications (3 credits)

Summer 2022

## Instructor:

Joanna Jauchen

## Office Address:

Exploratory Hall, Room 4403

## Contact Me:

Email: [jjauchen@gmu.edu](mailto:jjauchen@gmu.edu)

Most math questions are not good to ask over email. I reserve email in this course for questions about grades, or private discussions (not relevant to everyone in the course). I answer emails once a day (Monday – Friday).

Discussion Board: Instructions on Blackboard.

This is the best place to go for questions on exam dates/times, or anything not grade related.

Office Hours:

This is the best place to go for help with Math. Most math questions are too complex to cover via email. Unless it's very simple, I'll probably just ask you to come by my office hours.

GMU emergency closing info: 703-993-1000 Official emergency closing info

## Office Hours & Location:

Starting May 30: MWF 11 am – noon. Online. See Blackboard for link under “Syllabus and Office Hours”.

And online by appointment. I will be online

## Prerequisites:

For precise information goto <http://catalog.gmu.edu/> And click on “Courses” on the left, then select Prefix: “MATH” and Code: “108”.

Either one of the following requirements will suffice.

- Specified score on the Math Placement Test for Math-108. <http://math.gmu.edu/placement test.htm>
- Successful completion of self-paced algebra program offered by the Math Literacy Center.

Those who have problems registering should talk to Christine Amaya, the Senior Secretary of the Department of Mathematical Sciences, [camaya@gmu.edu](mailto:camaya@gmu.edu), phone (703)-993-1460.

## Course Description:

To provide a basic and firm understanding of elementary calculus, with a view towards applications in business as well as other discipline.

This course is offered as an online Asynchronous course, taught using Blackboard, with 3 proctored exams (two term exams and one final exam). You must be able to take exams online using a lockdown browser and a second device running zoom.

## Goals:

Quantitative Reasoning: This course satisfies GMU’s Quantitative Reasoning Foundation Requirement.

The learning outcomes that we will achieve to meet that requirement are:

1. Students are able to interpret quantitative information (i.e., formulas, graphs, tables, models, and schematics) and draw inferences from them.
2. Given a quantitative problem, students are able to formulate the problem quantitatively and use appropriate arithmetic, algebraic, and/or statistical methods to solve the problem.
3. Students are able to evaluate logical arguments using quantitative reasoning.
4. Students are able to communicate and present quantitative results effectively.

Course Goals: The course itself seeks to satisfy the following goals:

1. Students improve and solidify their algebraic skills.
2. Students understand and apply derivatives as a tool to analyze change in quantified models.

3. Students analyze and interpret results in the context of Business and IT applications.
4. Students understand and compute integrals and their relationship to derivatives.

## Required Items

### Required Materials:

1. Access Code only (\$90 online) to access the ebook and MyMathLab (this is my recommendation) for *Calculus for Business, Economics, Life Sciences and Social Sciences, 14<sup>th</sup> edition*

If you buy a used book, please be sure you have an access code. It is required for this course.

2. Calculator: You may use a \*simple\* Scientific Calculator. Suggested: TI 30X IIs.

#### Not allowed:

Advanced Scientific Calculators: TI 36X Pro, and more.

Graphing Calculators: Ti:83, 84 TI-89, TI-92, or TI-Nspire.

No calculators are allowed that perform integration/differentiation, either algebraic or numeric.

3. We take tests via the Pearson lockdown browser. Your computer needs to be able to run that, or you need to be able to come to campus for exams. In addition to that computer, you'll need a second device to run zoom for exams (like a tablet or phone). More detailed exam information can be found in Blackboard under "Exam Information." Please read that before you decide if you can take this course or not.

### Required Technologies:

1. You need regular and consistent access to a computer, connected to the internet for this course.
2. It is highly recommended that you have access to high speed Internet to watch video lectures and take exams.
3. This online course is taught via Blackboard Courses. To get to our course, login to <http://mymason.gmu.edu>, select the Courses Tab, and Math 108 can be found in the Course List.
4. You need access to your GMU email account. In order to ensure student privacy, I only correspond with you via your GMU email.
5. All videos lectures are posted on YouTube. You need to be able to access youtube to participate in this course.
6. We take tests via the Pearson lockdown browser. Your computer needs to be able to run that, or you need to be able to come to campus for exams. In addition to that computer, you'll need a second device to run zoom for exams (like a tablet or phone). More detailed exam information can be found in Blackboard under "Exam Information." Please read that before you decide if you can take this course or not.

### Required Meeting Dates:

Exams will be proctored online on specified dates, as listed in the schedule at the end of this syllabus. They will be taken online.

You need a computer that will run the Pearson lockdown browser and a second device to run zoom. More details in Blackboard.

## Assignments

### Grading:

I use a weighted average in this course. Here are the weightings:

MyMathLab Homework Average	20%
Quiz Average	20%
Exam 1	20%
Exam 2	20%
Final Exam	20%

Grades are not curved, and the standard grade breakdown applies for overall course grades:

A	90% - 100%
B	80% - 90%
C	70% - 80%
D	60% - 70%
F	Below 60%

+/- added at instructor discretion

### **MyMathLab Homework and quizzes (accepted late with penalty):**

We will use MyMathLab in this course to complete homework and also to do quizzes.

See Week 0 in Blackboard to sign up for the MyMathLab Homework system.

MyMathLab is not operated by GMU. For technical difficulties: <https://support.pearson.com/getsupport/s/contactsupport>

MyMathLab is a computer graded system. If you get problems right, they are marked correct. There is no partial credit on individual questions. The computer system, like most technical systems is picky about inputs, so please check your answers before submitting your work.

MyMathLab homework and quizzes are due on the due date at 11:59 pm.

Homework is accepted late for a 20% penalty. Quizzes are accepted late for an 20% penalty. Last day to turn in all Homework and quizzes is outlined in the schedule on the last page.

Penalties are applied for late work are regardless of excused or unexcused absence.

### **Exams (including the Final Exam):**

There are 2 term exams in this course, and one comprehensive final exam. If you have a cruddy day on Exam 1 or 2, there is a makeup exam given at the end of the semester. This makeup can replace one exam (either Exam 1 or 2) but not both. No makeup exams are offered for the makeup – if you have technical issues during the makeup, then your previous exam attempt will count. You can take the makeup if you missed the exam due to excused absence, technical issues, if you accidentally left the room during the exam, or if you just want to try to improve your score etc. But the makeup is the only option if something goes wrong on Exam 1 or 2. If you are absent for both exams and one of them is unexcused, you will only be able to use the makeup exam for the excused absence.

Exam dates are provided on the last page in the schedule. I reserve the right to change exam dates as the semester progresses (in this online course, this rarely happens except in extreme circumstances).

We will be taking the exam online, but using proctors, so there should be a window of time available to you to take your exam on those dates. I'll post this window as soon as the test proctoring schedule is set. You will need a computer that can work the Pearson lockdown browser and also a second device that will run zoom for the online proctoring.

The final exam date is also given in the schedule on the last page of the syllabus. There are no make-ups for the Final Exam. No Final Exams are given early.

All exams are given to uphold strict academic integrity standards. The following policies are in place for each exam.

1. No collaboration is allowed on the exams. 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 GMU Honor Code. The exam should be your work and your work only.
2. You may use a scientific calculator on the exam. You may not use a graphing calculator on the exam. No other books, notes, cell phones, computers or aids may be used. Having access to any unauthorized materials, calculators or devices while you are in possession of the exam is a violation of the academic honesty code.
3. Once you receive the exam, you are not allowed to leave the exam room (in front of your computer) until you are ready to turn the exam in.

Exams are given as stated in the schedule at the end of the syllabus. Once I know exam times, I post them and you sign up for a time. I suggest you sign up early. A couple days before the exam, your exam time is set and you would need to contact me to change it. Once it is set, your exam time is considered your official exam time in this course. If you ask to change it after it is set, that's considered an absence. I am sometimes unable to change exam times based on student preference. These are treated as any other college absence and you will be asked to provide documentation of your reason to move your exam.

**Late Work Policy:**

- MyMathLab assignments: A 20% late penalty is deducted for any late work you turn in. This includes homework and quizzes. This penalty is applied to excused and unexcused absences.
- Exams: No exams may be taken late without an excused absence which is fully documented, and deemed to be excused by the professor. If you are going to miss an exam, you should contact the instructor prior to missing to check if your absence is excused. If you can't check prior, check in within 24 hours to avoid any miscommunication. If you miss an exam, or have a rough exam, there is a makeup exam given later in the semester that can replace Exam 1 or Exam 2 (not both).

In this course, I have the 20% penalty (outlined above) as a blanket "life happens to people" policy. This covers sickness, having work, have a computer break, having a cruddy day where somehow stuff just didn't get done, etc.

I don't want to get into the business of judging when adults are "excused" from assignments or not. So, this policy is out of respect for the fact that you are the best judge of when you need to skip assignments to get the other parts of your life done. This also means that I do not give extensions or allow late work outside of this policy.

## Help and Resources

**Tutoring:**

The Math Tutoring Center is located in the Johnson Center Room 344. Help is available on a walk-in basis. For hours of operation see <http://math.gmu.edu/tutorcenter.htm>

**Academic dishonesty and the GMU Honor Code:**

You are expected to follow the GMU Honor Code <http://academicintegrity.gmu.edu/honorcode/>

No collaboration is allowed on graded assignments, quizzes or tests. Any indication that you have worked together, used someone else's ideas, copied, or allowed fellow student to copy your work is a violation of the GMU Honor Code.

**Some** of the behaviors that will be considered cheating are:

- Posting the contents of exams to any website or giving them to any person
- Communicating with another person during an assessment
- Copying material from another person/website from any assignment being graded
- Allowing another person to copy from any assignment being graded
- Use of unauthorized assistance on any assignment being graded
- Use of unauthorized notes or books during an assessment
- Providing or receiving a copy of a quiz or exam used in the course
- Having a cell phone in your possession during an assessment

**Withdraw & Audit** See the GMU website for important add/drop deadlines: <https://studentaccounts.gmu.edu/calendars/>

**Learning Differences & Special Needs:**

If you have a learning or physical difference that may affect your academic work, please see me and contact the Office of Disability Services (ODS) at 993-2474, <http://ods.gmu.edu> . All academic accommodations must be arranged through the ODS.

Efforts have been made to make this course accessible for students with learning and physical differences. If you find you have additional needs beyond those that have been provided, again, please contact me and ODS so I can be sure that the course is meeting your needs.

**Counseling and Psychological Services:**

Counseling and Psychological Services are available for GMU students.

<http://caps.gmu.edu>

703-993-2380

**University Policies**

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

# Math 108 Schedule Summer 2022 - Online

Each Unit contains the following:

## Ungraded Assignments:

1. Watch the video lecture posted on the Blackboard website. These are all in “Video Lecture and Written Work”
2. Discussions – Post any questions you have to the discussion board.

## Graded Assignments:

1. MyMathlab Homework: Due by 11:59 pm EDT on due dates listed below
2. MyMathLab quiz: Due by 11:59 pm EDT on due dates listed below

Course dates are tentative and subject to change.

Unit	Dates	Topic	Due Dates
0	Before Class	Get Ready for Class	May 23 <ul style="list-style-type: none"> <li>• How to use MyMathLab and Syllabus Quiz</li> <li>• Self-Placement Quiz</li> </ul> <p>These are mandatory, and you cannot start on Unit 1 until these two are complete.</p>
1	May 23-25	Class Introduction Functions and Graphing	May 25 <ul style="list-style-type: none"> <li>• MML Homeworks</li> <li>• MML Quiz</li> </ul>
2	May 26 - 27	Finite limits and Infinite limits	May 27 <ul style="list-style-type: none"> <li>• MML Homeworks</li> <li>• MML Quiz</li> </ul>
3	May 28 - 29	Polynomials and Rational Functions	May 29 <ul style="list-style-type: none"> <li>• MML Homeworks</li> <li>• MML Quiz</li> </ul>
4	May 30 – Jun 1	Exponential functions Log functions	May 31 <ul style="list-style-type: none"> <li>• MML Homework</li> <li>• MML Quiz</li> </ul>
5	May 30 – June 3	Review and Exam 1	<b>June 3</b> <ul style="list-style-type: none"> <li>• Last day to turn in all MML work from Units 1, 2, 3, and 4.</li> </ul> <b>June 3</b> <ul style="list-style-type: none"> <li>• Exam 1 Review MML</li> <li>• Exam 1</li> </ul>
6	June 4 - 5	Rates of Change and the derivative	June 5 <ul style="list-style-type: none"> <li>• MML Homework</li> <li>• MML Quiz</li> </ul>
7	June 6-8	Exponential and Log derivatives	June 8 <ul style="list-style-type: none"> <li>• MML Homeworks</li> <li>• MML Quiz</li> </ul>
8	June 9-10	Product, Quotient and Chain Rules	June 10 <ul style="list-style-type: none"> <li>• MML Homework</li> <li>• MML Quiz</li> <li>•</li> </ul>
9	June 11-12	Implicit Differentiation and Applications	June 12 <ul style="list-style-type: none"> <li>• MML Homeworks</li> <li>• MML Quiz</li> </ul>
10	June 11-14	Review and Exam 2	<b>June 14</b> <ul style="list-style-type: none"> <li>• Last day to turn in all MML work from units 6,</li> </ul>

			<p><b>7, 8, and 9</b></p> <p><b>June 14</b></p> <ul style="list-style-type: none"> <li>• Exam 2 Review MML</li> <li>• Exam 2</li> </ul>
11	June 15-17	Extrema and Concavity	<p>June 17</p> <ul style="list-style-type: none"> <li>• MML Homework</li> <li>• MML Quiz</li> </ul>
12	June 18-19	Graphing using derivatives	<p>June 19</p> <ul style="list-style-type: none"> <li>• MML Homeworks</li> <li>• MML Quiz</li> </ul>
13	June 20-22	Optimization and Absolute Max and Min	<p>June 21</p> <ul style="list-style-type: none"> <li>• MML Homework</li> <li>• MML Quiz</li> <li>• Post-course assessment</li> </ul>
	June 22 and 23	<b>Makeup Exam</b>	<p><b>June 23</b></p> <ul style="list-style-type: none"> <li>• <b>Makeup Exam</b></li> <li>• <b>You might be able take the final early if you are ready – more on this later</b></li> </ul>
14	June 20 - 25	Final Exam Review and Final Exam	<p><b>June 25</b></p> <ul style="list-style-type: none"> <li>• <b>Last day to turn in all MML work from units 11, 12 and 13</b></li> </ul> <p><b>June 25</b></p> <ul style="list-style-type: none"> <li>• <b>Final Exam Review</b></li> <li>• <b>MML</b></li> <li>• <b>Final Exam</b></li> </ul>