

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

Fall 2017

Instructor:

Joanna Jauchen

Office Address:

Exploratory Hall, Room 4403

Contact Me:

Email: jjjauchen@gmu.edu

Most math questions are not good to ask over email. Math questions should be asked in the discussion board. I reserve email in this course for questions about grades, or private discussions (not relevant to everyone in the course). Anything else, post to the discussion board. 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, math, or anything not grade related. Also a great place to ask questions about the mathematics in this course.

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

Office Hours & Location:

MW 1:30 – 3 pm in Exploratory 4403 (please email me to let me know you are coming)

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, 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.

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 (\$100 online) to access the ebook and MyMathLab (this is my recommendation) for *Calculus for Business, Economics, Life Sciences and Social Sciences*

OR

Calculus for Business, Economics, Life Sciences and Social Sciences Plus NEW MyMathLab
ISBN: 9780321925718 (\$142 new) - at the bookstore website this says "CALCULUS F/BUS., ECON...(LOOSE) – W/ACCESS"

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. No calculators are allowed that perform integration/differentiation.
Graphing Calculators: Ti:83, 84 TI-89, TI-92, or TI-Nspire.

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.
3. This course is taught using 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. YouTube requires Adobe Flash player to be installed on your device. There's a test video on the website under Week 0, so you can try out your system.

Assignments

Grading:

You choose which of these weighted averages I will use for you in this course.

OPTION 1: (without Collaboration grade)

2 Unit Tests	40%
MyMathLab Homework	15%
MyMathLab Quizzes	10%
Written Problems	15%
Final Exam	20%

OPTION 2: (with Collaboration grade)

2 Unit Tests	40%
MyMathLab Homework	15%
MyMathLab Quizzes	10%
Written Problems	5%
Collaboration	10%
Final Exam	20%

You must choose one of these options by Sep 7 at which point all students will be placed in groups based on their collaboration preferences. Students failing to select an option will automatically be placed into Option 1.

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 Dec 10.

Discussions:

Most math questions are best asked in the discussion board. Please login and ask away. I monitor the discussion board on a regular basis.

Collaboration

I take attendance every class. There are no attendance grades but attendance affects your collaboration grade which is a subjective grade based on my assessment of your participation. Frequent absences, tardies or leaving early radically affect collaboration grade.

In this course, we will spend a lot of our time exploring mathematical ideas in groups of 3-6 people, engaged in active learning assignments. In order to get the most out of class, and also be a contributing member of your group, you need to come prepared for class each day. I will also ask you to be intentional and think carefully about how to make your group a great place to work and learn. Your Collaboration grade will be based on my observations of how you are working with each other. Some of the things I will be looking for are:

Being prepared means:

- Watching all video lecture before class and taking notes. Bring those notes to class.
- Doing all assigned readings and work before class
- Asking questions about homework and concepts before coming to class
- Bringing all necessary materials to class, as instructed

Collaborating in class means:

- Making thoughtful contributions to the group discussions and activities
- Encouraging a positive group atmosphere where all participant views are valued equally
- Ensuring all group members have an opportunity to voice their views
- Staying on task (no cell phones, texting or off topic conversations)
- Being on time and staying engaged for the entire class

Significant deductions are taken for using cell phones during class. Your collaboration grade is 10 points. The first time you are using a cell phone, I take off 5 points. The second time is another 5 points. After that, I ask you to leave class.

Written Work (no late work accepted)

I routinely ask you to complete problems for me during class to turn in. These will be given every Monday (on Labor Day weekend, given on Wednesday). The purpose of this is so I can see the work that you are doing and give you feedback before the exam.

Written work is graded out of 10 points, and the point allocation varies depending on the problem. In general, I am looking for:

- Follows "Expectations for Written Work" laid out in the Written Work information and "Graphing using point plotting" (Lesson 1).
- Solution is correct, with all relevant steps and supporting work shown.
- Solution is clear, well organized and easy to follow.
- Student uses sentences appropriately to fully explain the solution and/or to interpret the results of the analysis.

Practice written work problems are provided so you can have more to practice on for the written work portion of the class and exams. These are not collected.

Exams (including the Final Exam):

There are 2 term exams in this course, and one comprehensive final exam. There are no make-up exams, unless you have a documented excused absence (that is an absence that I consider excused, like being in the hospital). Decisions about excused absences are solely at the discretion of the instructor.

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).

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.

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. Seats are assigned during each exam. Once you receive the exam, you are not allowed to leave the exam room until you are ready to turn the exam in.

Late Work Policy:

- Written work: No late work is accepted. Two low written work grades dropped to account for excused and unexcused absences.
- MyMathLab assignments: A 20% late penalty is deducted for any late work you turn in. This includes homework and quizzes.
- 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.

In this course, I drop written work grades (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:

- Communicating with another person during an assessment
- Copying material from another person 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
- Use of a cell phone or pager during an assessment

Withdraw & Audit See the GMU website for important add/drop deadlines: <http://registrar.gmu.edu/calendars/2014spring/>

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 Fall 2017

Weeks run from Sunday to Saturday in this course and each week contains the following:

Ungraded Assignments:

1. Watch the video lecture posted on the Blackboard website.
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
2. Written Work is due (uploaded) to Blackboard by 11:59 pm EDT on due dates listed below.

Course dates are tentative and subject to change.

Unit	Dates	Topic	Due Dates
0	Aug 21 – 27	Get Ready for Class	
1	Aug 28 – Sep 2	Class Introduction Functions and Graphing	Sep 23 <ul style="list-style-type: none"> • MML Homework • MML Quiz
2	Sep 3 – Sep 9	Finite limits and Infinite limits	Sep 9 <ul style="list-style-type: none"> • MML Homework • MML Quiz
3	Sep 10 – Sep 16	Polynomials and Rational Functions	Sep 16 <ul style="list-style-type: none"> • MML Homework • MML Quiz
4	Sep 17 – Sep 23	Exponential functions Log functions	Sep 23 <ul style="list-style-type: none"> • MML Homework • MML Quiz
5	Sep 24 – Sep 30	Review and Exam 1	Sep 27 (Wed) <ul style="list-style-type: none"> • Exam 1 Review MML • Exam 1 (on campus)
6	Oct 1 – Oct 7	Rates of Change and the derivative	Oct 7 <ul style="list-style-type: none"> • MML Homework • MML Quiz
7	Oct 8 – Oct 14	Exponential and Log derivatives	Oct 14 <ul style="list-style-type: none"> • MML Homework • MML Quiz
8	Oct 15 – Oct 21	Product, Quotient and Chain Rules	Oct 21 <ul style="list-style-type: none"> • MML Homework • MML Quiz
9	Oct 22 – Oct 28	Implicit Differentiation and Applications	Oct 28 <ul style="list-style-type: none"> • MML Homework • MML Quiz
10	Oct 29 – Nov 4	Review and Exam 2	Nov 1 (Wed) <ul style="list-style-type: none"> • Exam 2 Review MML • Exam 2 (on campus)
11	Nov 5 – Nov 11	Extrema and Concavity	Nov 11 <ul style="list-style-type: none"> • MML Homework • MML Quiz
12	Nov 12 – Nov 18	Graphing using derivatives	Nov 18 <ul style="list-style-type: none"> • MML Homework • MML Quiz
BREAK	Nov 19 – Nov 25	THANKSGIVING BREAK	
13	Nov 26 – Dec 2	Optimization and Absolute Max and Min	Dec 2 <ul style="list-style-type: none"> • MML Homework • MML Quiz
14	Dec 3 – Dec 8	Final Exam Review and Final Exam	Dec 18 <ul style="list-style-type: none"> • Final Exam Review MML
	Dec 18		Last Day to turn in all MML Homework and quizzes.
15	Dec 18	Cumulative Final Exam	Final Exam: Take the exam Dec 18 10 am – 1:15 pm

