MATH-108-B02/B04– Introductory Calculus with Business Applications (3 credits)
Summer 2020

Instructor:

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Contact Me:

Email: alukyane@gmu.edu

Discussion Board: Instructions on Blackboard.

This is a great 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

Office Hours & Location:

Online via Zoom, see Blackboard for details.

30-minute session Monday through Friday at 6pm, and most days at 9am.

Discussions:

I monitor the discussion board on a regular basis. Please login and ask away.

Prerequisites:

For precise information go to 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. https://science.gmu.edu/academics/departments-units/mathematical-sciences/mathematical-sciences-testing-center
- 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.

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 at GMU or at an approved proctoring facility.

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, 14th edition*

   OR

   Calculus for Business, Economics, Life Sciences and Social Sciences Plus NEW MyMathLab
   ISBN: 9780321925718 ($150 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 Scientific or graphing calculator in this course. Please be aware that you are required to show evidence for graphing in this course. No credit is given for just drawing the graph that you see on your calculator.

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 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

Required Meeting Dates:

This course is offered entirely online with no required synchronous meeting dates. Exams are given on specific dates, as listed in the schedule at the end of this syllabus. These will be taken online

Assignments

Grading:

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

MyMathLab Homework	20%
Quizzes (MML and Written)	20%
Exam 1 (MML and Written)	20%
Exam 2 (MML only)	20%
Final Exam (MML and Written)	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 some quizzes.

See Start Here 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.

MML Homework is accepted late for a 20% penalty up to certain deadlines. MML Quizzes are accepted late for a 20% penalty (also up to certain deadlines). Last day to turn in MML Homework and quizzes is outlined in the schedule on the last page.

Written Work Quizzes (no late work accepted)

Written Work Examples:

Example written work is not turned in. I give you these example problems, with all solutions posted so you can use them to help understand how to do the quizzes. If you are having trouble on the quizzes, please take a look at the practice problems for help. You should absolutely be reviewing these before taking the written work quizzes.

Written Work Quizzes (Grading is very strict):

Due by 11:59 pm on the dates listed on the calendar. The purpose of this is so I can see the work that you are doing and give you feedback before the exam.

Written work must be submitted to the appropriate unit, in Blackboard in a **single PDF file** (PDF only). No images or Word files will be accepted. **Multiple files are not accepted.** No late written work accepted.

See Unit 1 in Blackboard for more detailed information about submitting your written work.

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).
- Format is correct (one pdf file). Submissions are not accepted in any other format.
- Work is submitted in a professional, screen-readable way (right-side up, legible. Not sideways or upside down)
- All work is handwritten. No typed work is accepted. No computer-generated graphs are accepted.
- 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.

See my solutions to the written work practice for examples of what I am looking for on written work.

Viewing your graded work: Please click on "My Grades" in Blackboard. I make comments and notes on the work you turn in and upload corrected versions. To see these corrections, click on "My Grades" and then on the assignment you want to view. You should see your work with my comments. My solutions to the written work are posted under "Solutions" on Blackboard.

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). 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).

All Exams will be taken completely online. There are no make-ups for the Final Exam. Exams 1 and the Final include a written portion that you will do by hand and upload to Blackboard.

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, use someone else's work, 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 to do numerical computations only. Having access to a more advanced calculator does not change the work that you are expected to show in this course. You are expected to demonstrate your knowledge of Calculus and graphing in the course, not how to use a graphing calculator.
3. You may use your own notes and problems you have recorded by hand. No other resources may be used.

Late Work Policy:

- Written work: No late work is accepted. One 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 one written work grade (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.

Help and Resources

Tutoring:

The Math Tutoring Center is operating during the summer online. For hours of operation see *https://science.gmu.edu/academics/departments-units/mathematical-sciences/math-tutoring/tutoring-center-hours-and*

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: https://registrar.gmu.edu/calendars/summer-2020/

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

Student Support and Advocacy Center:

SSAC provides guidance to students experiencing hardship or trauma, or otherwise encountering barriers to success.
https://ssac.gmu.edu/
703-993-3686

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 2019 - Online

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

Ungraded Assignments:
1. Watch the video lecture posted on the Blackboard website and in MML.
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
3. Written Work is due (uploaded) to Blackboard by 11:59 pm EDT on due dates listed below.
4. Exams are due in MML and Blackboard by 11:59 pm on dates listed below. Exams are online available on exam days, for limited time periods.

Course dates are tentative and subject to change.

Unit	Dates	Topic	Due Dates
0	Before Class	Get Ready for Class	June 2 • How to use MyMathLab and Syllabus Quiz • Self-Placement Quiz These are mandatory, and you cannot start on Unit 1 until these two are complete.
1	Jun 3-5	Class Introduction Functions and Graphing	June 5 • MML Homeworks • MML Quiz
2	June 6-9	Finite limits and Infinite limits	June 9 • MML Homeworks • Written Work Quiz
3	June 10-12	Polynomials and Rational Functions	June 12 • MML Homework • Written Work Quiz
4	June 13-16	Exponential functions Log functions	June 16 • MML Homework • MML Quiz
5	June 17-19	Review and Exam 1	**June 19** • **Last day to turn in all MML work from Units 1, 2, 3, and 4.** **June 19** • **Exam 1 Review MML** • **Exam 1 (in MML and written)**
6	June 20 – 26	Rates of Change and the derivative	June 26 • MML Homework • MML Quiz
7	June 27-30	Exponential and Log derivatives	June 30 • MML Homework • Written Work Quiz
8	July 1-3	Product, Quotient and Chain Rules	July 3 • MML Homework • MML Quiz •

9	July 4-7	Implicit Differentiation and Applications	July 7 • MML Homework • Written Work Quiz
10	July 8-10	Review and Exam 2	**July 10** • **Last day to turn in all MML work from units 6, 7, 8, and 9** **July 10** • **Exam 2 Review MML** • **Exam 2 (MML ONLY)**
11	July 11-14	Extrema and Concavity	July 14 • MML Homework • MML Quiz
12	July 15-17	Graphing using derivatives	July 17 • MML Homework • Written Work Quiz
13	July 18-21	Optimization and Absolute Max and Min	July 21 • MML Homework • MML Quiz • Post-course assessment
14	July 22-24	Final Exam Review and Final Exam	**July 24** • **Last day to turn in all MML work from units 11, 12 and 13** **July 24** • **Final Exam Review MML** • **Final Exam (in MML and written)**