Math 108-001 Syllabus
2018 Fall
Introductory Calculus with Business Applications
Instructor: Lingxia Alicia Li

Office: Exploratory Hall, Room 4309, or Conference Room 4301.

Email: lli23@gmu.edu (Please include your section #001 when sending emails to me.)

Office hours: Tuesday 10:30 am – 11:30 am,

Wednesday, 9:00am – 10:00am. Or by appointment.

Lecture meeting days/time/location:

Monday & Wednesday, 7:30 am. – 8:45 am. Planetary Hall, Room #131.

Required Items:

1. All students are required to get MyMathLab Access. Once you have an account, the e-book is within it. (Book name: *Calculus for Business, Economics, Life Sciences and Social Sciences, 14th edition, GMU edition only*)

   Go to MyMathLab.com, use the Course ID: li65066 to register into this class. Important: Please use your official GMU registration name and your GMU email address to register in your MML account.

   i) Online: MyMathLab.com

   ii) GMU book store: Access code (and E-book). ($90)

   iii) GMU book store: Access code (and E-book) + Loose-leaf book, *Calculus for Business, Economics, Life Sciences and Social Sciences* Plus NEW MyMathLab ISBN: 9780321925718 ($142)

   ❖ If you want to buy a used access code, you need to make sure the old code works.

2. A laptop PC, with the ability of connecting to the internet. You need to bring it to class to take the tests and possibly some of the quizzes as well.

3. Calculator: You may use a *simple* Scientific Calculator such as TI 30X IIs.

   Not allowed: No Advanced Scientific Calculators such as TI 36X Pro or better are allowed. No Graphing Calculators are allowed. No calculators that perform numeric or symbolic integration/differentiation are allowed.

Homework:

Homework will be assigned on MyMathLab in every lecture. The due date is on the coming week's quiz day (or test day).
There will be warming-up exercises available in the "Study Plan". The goal of the warming up questions is to help you understand and master the course material better. You are strongly encouraged to visit the "Study Plan" and complete as many problems as possible.

Quizzes:

A weekly **quiz** will be given on each Wednesday (quiz day). It will be either in paper or online. Each quiz will be 15 – 30 minutes long.

Examinations:

There will be three midterm exams. Each will cover the material taught after the previous midterm. The final exam will be cumulative/comprehensive. All exams will take place in the same class room where the class meets regularly. All exams will be closed-books and closed-notes.

- **1st Midterm:** 09/26/2018   Wednesday
- **2nd Midterm**: 10/24/2018   Wednesday
- **3rd Midterm**: 11/14/2018   Wednesday
- **Final:**   12/12/2018   Wednesday 7:30 am – 10:15 am

Grading: The lowest midterm test score will be dropped.
           Two lowest quiz scores will be dropped.
          Course Score = Home work (10%) + Quizzes (40%) + Two Midterms (30%) + Final (20%)

- A+: 100 – 98,   A: 97 – 92.   A--: 91 – 90
- B+: 89 – 88,   B: 87 – 82,   B--: 81 – 80
- C+: 79 – 78,   C: 77 – 72,   C--: 71 – 70
- D: 69 – 60,   F: 59 – 0

Course Topics to be Covered:

Sec 1.1 Function
Sec 1.2 Elementary Functions;
Sec 1.3 Linear and Quadratic Functions
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Sec 1.4 Polynomial and Rational Functions
Sec 1.5 Exponential Functions
Sec 1.6 Logarithmic Functions;
Sec 2.1 Introduction to Limits
Sec 2.2 Infinite Limits and Limits at Infinity;
Sec 2.3 Continuity
Sec 2.4 The Derivative
Sec 3.2 Derivative of Exponential and Logarithmic Functions;
Sec 3.3 Derivative of Products and Quotients;
Sec 3.4 The Chain Rule
Sec 3.5 Implicit Differentiation;
Sec 4.1 First Derivative and Graphs
Sec 4.2 Second Derivative and Graphs;
Sec 4.5 Absolute Maxima and Minima;
Sec 4.6 Optimization
Sec 5.1 Antiderivatives and Indefinite Integral;
Sec 5.4 Definite Integral;
Sec 6.1 Area Between Curves

Make-up exams/Quizzes:

➢ Because two lowest quizzes will be dropped, make-up Quizzes will NOT be given in any circumstances.
➢ Make-up midterms or final require a **legitimate excuse** for consideration.
- **Legitimate Excuse**: doctor's note, battle wounds, or other proof of an emergency (unavoidable) situation. Vacations, birthday celebrations, hangovers, and other similar circumstances will not be considered legitimate.

- If you have to miss a test, it is your responsibility to contact the instructor **before** the test takes place. If there is an unexpected emergent case happened on the day you take the exam, or you are unable to contact me before the test, you need to contact me the same day or one day after the exam at the latest.

- Make up exams may be more challenging than in-class ones-----please **avoid** makeups if possible.

Missing lectures and Lecture notes

If you shall miss a lecture for whatever reason, it is your responsibility to get the lecture notes from one of your

classmates.

Course Description:

Math 108 is a course to provide a basic and firm understanding of elementary calculus, with a view towards applications in business, sciences and daily life. You will extend your experience with functions as studying the fundamental concepts of calculus. You will review and extend your knowledge of algebra and basic analytic geometry. Important objectives of the calculus sequence are to develop and strengthen problem-solving skills and to read, write, speak, and think in the language of mathematics. In particular, you will learn how to apply the tools of calculus to a variety of practical problems.

Course Learning Outcomes:

- Work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal. You should understand the connections among these representations.
- Understand the concept of limit.
- Understand the meaning of the derivative in terms of a rate of change and local linear approximation and use derivatives to solve a variety of problems.
- Understand the meaning of integral and use it to solve a variety of problems. Understand the relationship between derivative and integral.
- Determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement. Use technology to help solve problems, experiment, interpret results, and verify conclusions.
- Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

Honor code/Collaboration:

- Needless to say, collaboration of any kind during tests or quizzes, is cheating. You are to abide the **GMU's Honor Code. For** more information about the Honor code, please refer to: http://mason.gmu.edu/~montecin/plagiarism.htm
- During a test or in-class-quiz, you are not allowed to help anyone nor receive any help from anyone, except possibly from the test/quiz proctor.
- During a test or in-class-quiz, you are not allowed to use any external sources such as textbooks, notes, cell phone, programmable/graphing calculators, etc, unless otherwise clearly stated on the tests/quizzes.
- However, collaborative discussion about the homework is allowed and encouraged! Be sure though, to understand them and write your own solutions.

Courtesy:

Be courteous to your fellow classmates. **No talking during lectures except question asking. Your cell phone should be in silent mode or be turned off in class.**

Available Help:

-See me during my office hours.
-Undergraduate Math Tutoring Center, 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*

Other Important information:

Calendar/Important Dates: https://registrar.gmu.edu/calendars/fall-2018/

Final Exam Schedule: https://registrar.gmu.edu/calendars/fall-2018/final-exams/

Campus Map: http://www.gmu.edu/resources/welcome/FairfaxMap2016.pdf

Come to class and work on the assignments, you will succeed!