Math 108-003 Syllabus
Fall 2019
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 #003 when sending emails to me.)

Office hours: Thursday, 1:30pm – 2:40pm, or by appointment.

Lecture meeting days/time/location: Friday 1:30 pm – 4:10 pm. East Building, room 122.

Required Items:

1. MyMathLab Account:

   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: li34061 to register into this class. Important: Please use your official GMU registration name and your GMU email address to register in your MML account.

   Buying Options:

   i)   Online: MyMathLab.com.

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

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

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: Not mandatory. No calculators are allowed during tests or quizzes.

Homework:

Homework will be assigned on MyMathLab in every lecture. The due date is next Friday.
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 Friday start from the second week, if there is no test/exam. It will be either in paper or online. Each quiz will be 15 – 30 minutes long. All quizzes will be closed-books and closed-notes.

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 Test:** 09/27/2019   Friday
- **2nd Test**: 10/25/2019   Friday
- **3rd Test**: 11/15/2019   Friday
- **Final:**   12/13/2019   Friday 1:30 pm – 4:15 pm

Grading: Two lowest quiz scores will be dropped.

Course Score 100% = Home work (10%) + Quizzes (45%) + Three Midterms (30%) + Final (15%)
- 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 Functions
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 3.1 The Constant e and Continuous Compound Interest
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 midterm tests or final Exam 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** makeup tests 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 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 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/spring-2019/

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

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