

"It is not knowledge, but the act of learning, not possession but the act of getting there, which grants the greatest enjoyment." Carl Friedrich Gauss

Syllabus for Calculus I - 81408 - MATH 1910 - 002
The University of Memphis

Instructor: Alpha BA **Office:** Dun Hall Room 374 **Phone:** (901) 678-1757

E-mail Address: alphaba@memphis.edu

Virtual Office Hours: Monday & Wednesday 10:00am to 12:00pm

Class Times W 12:40 pm - 2:05 pm & TR 11:20 am - 12:45 pm

Classroom: Remotely

MATH 1910 is a four-hour course, the first part of a three-semester sequence.

This course is intended to introduce first-year college students to the mathematical concepts, tools, and analysis necessary for a successful career in mathematics, science, or engineering.

Course Content: Major topics include finding limits of functions numerically, graphically, and algebraically, continuity of functions, finding derivatives using the difference quotient, power rule, sum and difference rules, product and quotient rules, and the chain rule, using derivatives to draw detailed graphs of functions and solve applications from business and science, exponential and logarithmic functions and their derivatives, graphs, and use in applications, antidifferentiation, finding both the definite and indefinite integrals, and using integrals to solve applications.

Course Objectives: To expand students' problem solving skills with techniques from calculus. To develop students' proficiency for solving problems motivated by economics, biology, physics, and other sciences. To prepare students for future work in science, technology, engineering, and mathematics (STEM) courses.

Prerequisites: One of the following criteria must be met to enroll in Math 1910:

Both Math 1710 and Math 1720 with a grade of C- or better,

Math 1730 with a grade of C- or better,

A ACT MATH subscore of at least 26.

Note: students with a stronger math background may be invited to take Honors Calculus I (Math 1421) in place of Math 1910. See <http://www.memphis.edu/msci/ugrad/honors.php> for more details. Students may not receive credit for both Math 1421 and Math 1910.

Method of Instruction: This course is taught as a guided lecture, which means notes will be given in lecture format.

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Course Materials: Textbook, Calculus, Early Transcendentals Volume I, 8th ed. by James Stewart; Graphing Calculator. Note: Graphing Calculators that do symbolic differentiation and integration are not allowed.

We will be using Webassign for online homework . You will be able to access it for free for two weeks starting Monday, August 17.

Student Access Code for Webassign is required after the free trial expires. All your Coursework will be done on Webassign .

- You will go through ecourseware to access your WebAssign homework .
- There will be no Access Code (Class key) provided
- User Name - Suggestion. Use your UofM User Name.
- If you need help signing up, contact WebAssign directly

<https://www.webassign.net/> or call 1-800-354-9706.

Grading Policy:

A 90-100 B 80-89 C 70-79 D 60-69 F below 60

FINAL EXAM: There will be a common final for all Calculus 1 (MATH 1910) to be given at the same time . **Date and times :TBD**

The Comprehensive Final exam, Best 4 exams scores (5 tests but I will drop the lowest test grade) and your average online homework will determine your final grade score for the semester.

No Make-ups for a missed homework, quiz, test, or final exam. If you must miss a test because of an official school function, you may schedule to take the test at a time prior to the original test date. No other rescheduling will be allowed.

Homework: Homework will be assigned on Webassign and must be finished before the due date for you to receive credit.

Chapters and Sections to be covered

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Chapter 1: Review of Functions

Chapter 2: Limits and Derivatives

2.1 The tangent and velocity problems

2.2 The limit of a function

2.3 Calculating limits using limit laws

~~2.4 The Precise Definition of a Limit~~

2.5 Continuity

2.6 Limits at infinity and horizontal asymptotes

2.7 Derivatives and rates of change

2.8 The derivative as a function

Chapter 3: Differentiation Rules

3.1 Derivatives of polynomials and exponential functions

3.2 The product and quotient rules.

3.3 Derivatives of trigonometric functions

3.4 The chain rule

3.5 Implicit differentiation

3.6 Derivatives of logarithmic functions

~~3.7 Rates of change in the natural and social sciences~~

~~3.8 Exponential growth and Decay~~

3.9 Related rates

3.10 Linear approximations and differentials

~~3.11 Hyperbolic functions~~

4.9 Introduction to Antiderivatives

Chapter 4: Applications of Differentiation

4.1 Maximum and Minimum Values

4.2 The Mean Value Theorem

4.3 How Derivatives affect the shape of a curve

4.4 Indeterminate forms and L'Hospital's Rule

4.5 Summary of Curve Sketching

4.6 Graphing with Calculus and Calculators (Maybe)

4.7 Optimization Problems

4.8 Newton's Method (Maybe)

4.9 Antiderivatives

Chapter 5: Integrals

5.1 Areas and Distances

5.2 The Definite Integral

5.3 Fundamental Theorem of Calculus

5.4 Indefinite integrals and the Net change Theorem

5.5 The Substitution Rule

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Tutoring: Free tutoring is available through the University's Education Support Programs. They offer an online assistance tutoring through UpSwing. The tutoring link is <https://www.memphis.edu/esp/onlinetutoring.php>

Student Accommodations

Students with accessibility issues or learning accommodation issues due to a disability should contact Disability Resources for Students (DRS) to submit an official request for course accommodations. Contact DRS at 901.678.2880 or at drs@memphis.edu
<https://www.memphis.edu/drs/index.php>

Academic Integrity

Plagiarism, cheating and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly, through participation or assistance, are immediately responsible to the instructor of the class in addition to other possible disciplinary sanctions which may be imposed through the regular institutional disciplinary procedures.
(<https://www.memphis.edu/osa/students/academic-misconduct.php>)

Student Health

Students who have a positive COVID-19 test should contact the Dean of Students at deanofstudents@memphis.edu.

Student Resources

Students who need additional resources can visit the Dean of Students Office website at <https://www.memphis.edu/deanofstudents/crisis/index.php>
<https://www.memphis.edu/msci/news/covid.php>

Course Schedule: Any changes of this schedule will be announced in class, and in writing.

Be Safe and Enjoy your Calculus journey !!