

MA118 CALCULUS
Spring 2021
Course Syllabus
Central Methodist University

Instructor: Mrs. Leverton
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(You are responsible for communication via email.)

Text: Calculus of a Single Variable, 8th Edition, Larson, Hostetler, Edwards, Houghton Mifflin, 2006.
ISBN: 0-618-50304-8

Calculator: A graphing calculator is not required for the course but is extremely helpful. I will be using a TI-84+.

Dual Credit: The dual credit class/meeting schedule will follow the Pilot Grove High School calendar as closely as possible (available at www.pilotgrove.k12.mo.us). We will meet five days a week with many built-in homework/study days and may start sooner and end later than CMU and some other dual credit courses.

Mission: Central Methodist University prepares students to make a difference in the world by emphasizing academic and professional excellence, ethical leadership, and social responsibility.

Course description: This course is the first in a series of three designed for the student who desires to complete the whole calculus series. It will focus on the differentiation and integration of algebraic functions and transcendental functions of a single variable, and also include an introduction to analytic geometry.

Common Core Competencies: MA 118 meets the competency requirements for Foundations in Mathematical Literacy [I.5-6].

Academic Conduct Policy: Any student caught committing academic misconduct will earn a zero for that assignment, quiz or exam. Furthermore that student will come under the auspices of the Academic Conduct Policy of CMU. It is the student's responsibility to review and understand the CMU Academic Conduct Policy.

Grievance Policy: Central Methodist University has established a grievance policy and process designed to provide students and others with a process to resolve potential issues. This policy and process is established to provide persons with an avenue to file a written concern and to establish a process to track and implement changes as a result of said concern. For more detailed information consult the CLAS catalog at: http://www.centralmethodist.edu/academics/catalog/clas_catalog/policies/index.php.

If an issue cannot be solved through consultation with the faculty or division chair, students can report an incident/issue within 30 days of the event via the online web form (<https://cm.maxient.com/reportingform.php?CentralMethodistUniv>).

Attendance: Regular attendance is necessary for this class. Late arrival or early departure from class may be counted as an absence. In the event of an absence, you are responsible for all of the material covered in class that day and any schedule changes or class announcements.

Course Outline

Upon successful completion of this course, the student will be able to:

- Graph linear models and find rates of change.
- Recognize basic types of transformations for functions.
- Find limits both graphically and numerically.
- Evaluate limits analytically.
- Determine continuity and one-sided limits.
- Evaluate infinite limits over special functions.
- Use the definition of a derivative to solve tangent line problems.
- Use the power rule, product rule, quotient rule, and chain rule to find first derivatives.
- Find derivatives implicitly.
- Use derivatives to find the extrema.
- Apply Rolle's Theorem and the Mean Value Theorem on a function.
- Use the first derivative to solve optimization problems.
- Apply the antiderivative and find the indefinite integral.
- Find the area of a region under a curve.
- Apply the fundamental theorem of calculus.
- Integrate by substitution.
- Use integration to find the area of a region between two curves.
- Find the volume of a solid of revolution using the disk method.

Grading Policies: There will be a test following each chapter (approximately 4-5 for the semester). Quizzes will be given periodically throughout the semester as well (usually 1 per chapter). Homework will be given daily. Portions of the tests/quizzes may be redone for a higher score at the discretion of the instructor and only if all assignments were thoroughly completed and submitted on time.

Tests 53%

Homework 25%

Quizzes 10%

Applications 3% EACH

Notes: Notes will be collected on the day of each exam (they will be returned to you). Points will be given based on their completion and accuracy. Neatness will count (legibility, labeling, enough

information to follow, etc.). Partially completed portions will earn no points.

Penalty for late work: NO LATE WORK IS ACCEPTED.

Class policy for making up work: Please let me know as soon as possible if you are going to miss class. Your assignments for the week are still due and need to be submitted on time. If you miss a quiz or test, it needs to be completed when you return and submitted that day.

Note: Central Methodist University does not discriminate on the basis of race, color, religion, sex, national origin, age, or federally defined disability in its recruitment, admission, and retention of students.

This syllabus is subject to change, without notice, at the discretion of the instructor.

Please email me as soon as possible so that I have your email address. I will use email to update you on changes in the schedule and/or the assignments and it is useful for you to ask questions and get help outside of class.