

MATH 1420: Calculus I

Fall 2017

Section 5
MW 1:00-1:50,
TuTh 12:30-1:50
LDB 218

Instructor:

Dr. Edward W. Swim

Office: LDB 432

Office Hours: MW 10:00-11:00, TuTh 2:00-3:00, or by appointment.

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Course Objective: To develop an understanding of and facility for the concepts and applications of limits, derivatives, and integrals.

About the Course: This course is designed to extend your understanding of functions and related applications in science and nature. We will develop a foundation for the mathematical concept of *limits* and a *derivative* to describe mathematical models built from functions. Additionally, we will examine the accumulation property and apply the concept of an *integral* to model this process as well as compute essential information about a system for which rates of change are known. Upon successful completion, students will demonstrate an understanding of the concepts of limits, continuity, differentiability, and integrability, and exhibit proficiency in the use of fundamental tools from calculus to quantify relationships between components of mathematical models in natural sciences and practical applications.

Prerequisite: *C or better in MATH 1410, or equivalent.*

Text: *Calculus, Early Transcendental Functions, 6th ed.* Ron Larson and Bruce Edwards. Cengage Learning, 2015.

Exams/Quizzes: There will be two major quizzes, two midterm exams, and a comprehensive final exam. Make up exams will NOT be given for any reason. The lowest exam grade (including an exam that is missed) may be replaced by the grade percentage from the final exam. The schedule for quizzes and exams is as follows:

- Exam 1 – Sep. 19 (100 pts.) – Limits
- Fundamental Derivatives Quiz – Oct. 5 (75 pts.) – Computing Derivatives
80% score or better on the FDQ is required to continue in the course.
- Exam 2 – Nov. 2 (100 pts.) – Applications of Derivatives
- Integrals Quiz – Nov. 21 (75 pts.) – Integration
- Final Exam – Dec. 5 (150 pts.) – Comprehensive

A score of at least 70% on the final exam is required in order to earn a grade of C or better in the course.

Homework: At the end of each lesson, I will post homework problems that are intended to provide an opportunity for you to practice the solution techniques we discuss in class. Each week, members of the class will be assessed on their *completion* of these homework problems based on classroom presentations. The total value of these assessments will be up to 75 points.

Daily Quizzes: I will also post reading assignments (roughly 10 minutes per section) that you should complete prior to the due date. A short quiz will be given at the beginning of class on the due date, and the total value of these quizzes will be up to 50 points.

Board Problems: Roughly 2–3 times each week, in-class exercises will be completed by teams of three or four students and solutions will often be presented at the board. The scoring for a problem that you and your team members solve at the board will be based upon a simple rubric: 2 points for a complete and mostly correct solution, 1 point for a reasonable attempt, and 0 points for completely incorrect attempts. At times, written solutions will be collected from groups for up to 5 points per activity. The total value of these in-class assessments will be up to 75 points.

Project: Finally, at the end of October you will be assigned an optimization project that will be due before the Thanksgiving break. This assignment will be worth 50 points.

Notes:

- *Attendance* – You should attend all classes and are responsible for all announcements, assignments, quizzes, and exams given in class. Additionally, a list of homework problems from the text will be posted on Blackboard:
<https://blackboard.shsu.edu/webapps/login/>
- *Academic Honesty* – The University expects all students to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. http://www.shsu.edu/~vaf_www/aps/documents/810213.pdf
- *Religious Holy Days* – Students are excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. As a courtesy, it is appreciated if you notify me in advance and in writing of the dates and times that are to be missed so that appropriate arrangements can be made regarding homework and/or exams.
http://www.shsu.edu/~vaf_www/aps/documents/861001.pdf
- *Disability Issues* – It is the policy of Sam Houston State University that no otherwise qualified individuals shall, solely by reason of their disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any academic program of the university. Students with a disability that affects their academic performance are expected to arrange for a conference with the instructor in order that appropriate strategies can be considered to ensure that participation and achievement opportunities are not impaired.
http://www.shsu.edu/~vaf_www/aps/documents/811006.pdf
- *Classroom Etiquette* - Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university.
<http://www.shsu.edu/students/guide/StudentGuidelines2010-2012.pdf#page=29>