Sam Houston State University

MATH 1420 **Fall 2017**

Calculus 1

Instructor: Assistant Professor Timothy Trujillo

I am a logician studying combinatorics and the foundations of mathematics. My research focuses on Ramsey theory and its application to combinatorial set theory and the theory of forcing.

- **Contact Information:**

Office: LDB 417A Phone: TBA Email: trujillo@shsu.edu

- **Office Hours:** Open door policy

Monday & Wednesday	11:05 am - 1:00 pm
Tuesday & Thursday	8:30 am - 9:20 am

- **Class Day/Time:** MW 10:00 am - 10:50 am & TTh 9:30 am - 10:50 am
- **Class Location:** LDB 401
- **Optional Textbook:** Calculus: Early Transcendental Functions 6th edition - Ron Larson & Bruce Edwards
- **ISBN:** 978-1-285-77477-0

Course Goal:

The primary goal of this course is to introduce students to the fundamental ideas of differential and integral calculus of functions of one variable.

Student Learning Objectives: On successful completion of the course, the students should be able to:

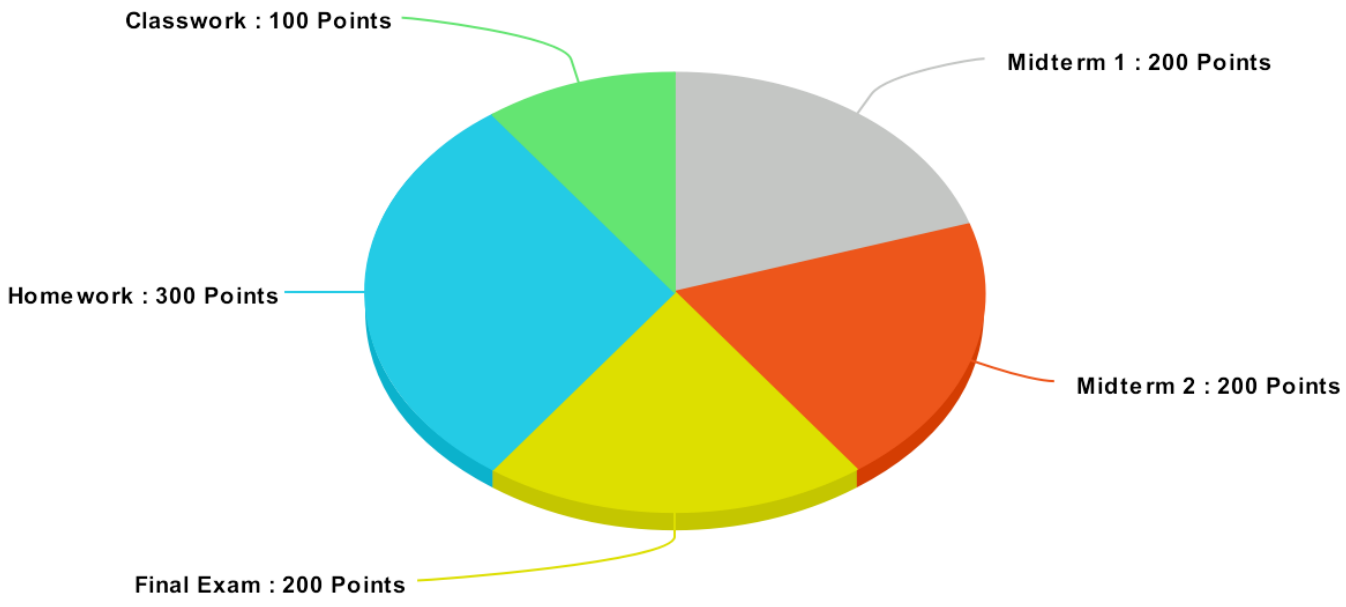
- **recognize** properties of functions and their inverses;
- **recall** and use properties of polynomials, rational functions, exponential, logarithmic, trigonometric and inverse-trigonometric functions;
- **understand** the terms domain and range;
- **sketch** graphs, using function, its first derivative, and the second derivative;
- **use** the algebra of limits, and l'Hopital's rule to determine limits of simple expressions;
- **apply** the procedures of differentiation accurately, including implicit and logarithmic differentiation;
- **apply** the differentiation procedures to solve related rates and extreme value problems;
- **obtain** the linear approximations of functions and to approximate the values of functions;
- **perform** accurately definite and indefinite integration, including by substitution.

Course Description:
Calculus was first invented to meet the mathematical needs of scientists of the sixteenth and seventeenth centuries. Nowadays calculus is a tool used almost everywhere in the modern world to describe change and motion. Its use is widespread in science, engineering, medicine, business, industry, and many other fields. Prerequisite: MATH 1410 with a grade of C or better.

Grading Procedures:

Midterm Exam 1	200 points
Midterm Exam 2	200 points
Final Exam	200 points
Homework	300 points
Classwork	100 points
Extra Credit	*200 points*
Total	1000 points

Points Earned	Final Grade
900 - 1000	A
800 - 899	B
700 - 799	C
600 - 699	D
0 - 599	F



Coursework Return Policy:
Barring any unforeseen circumstances, coursework (including homework and exams) will be graded and returned to students within two weeks. Feedback will be provided on all coursework or solutions will be posted. In general, final exams are not returned to the student nor are solutions posted, but students may schedule an appointment to review their final exam.

Absence Policy:
Attendance and serious interaction with the course material are critical to success in this class. Students should treat this class as they would other professional obligations.

When a student misses class for legitimate reasons/emergency situations students may contact the Dean of Students' Office by completing the "**Absence Notification Request Form**" (available in person or online at **www.shsu.edu/dept/dean-of-students/**).

Exams (60% of total grade):
We will have two midterm exams and one final exam throughout the semester. Each exam will be graded on a 200 point scale.

Exam	**Date**
Midterm 1	September 28th
Midterm 2	November 2nd
Final Exam	December 4th (10:30 am - 12:30 am)

Homework (30% of total grade):
Homework is a two page worksheet that will be assigned weekly on Mondays. Homework assignments are due at the start of class on the following Monday. Throughout the semester we will have 15 homework assignments worth 20 points each.

Classwork (10% of total grade):
Group work will be assigned during some classes. Students will turn in the assignment at the end of class and a score of 0, 1 or 2 will be given on the assignment. A running percentage grade will be computed throughout the semester. Points will be awarded at the end of the semester based on the percentage at the end of the semester. For example, if you obtain a 89.76% at the end of the semester you will be awarded 89.76 points out of 100 points.

Accommodations for ADA: (http://www.shsu.edu/dept/disability/index.html)
Students seeking academic accommodations under the Americans with Disabilities Act (ADA) should register with Students with Disabilities (SSD) Office located in the Lee Drain North Annex building (next to Farrington). In order for students with disabilities to be eligible for academic accommodations and adjustments, they need to provide documentation that shows evidence of a "substantially limiting" disability as defined by the federal legislation noted above. This documentation must be from a qualified professional who is licensed or certified to diagnose the disability in question.

The Sam Houston Academic Success Center:

1. Monday-Thursday: 8:00am - 7:00pm
2. Friday: 8:00am - 7:00pm
3. Saturday: Closed
4. Sunday: 2:00pm - 7:00pm
5. Both the Writing Center and the Math Center are open during normal hours of operation.

The Math Center at the Sam Houston Academic Success center is located in Farrington 104. If you wish to visit the Math Center for assistance, you may walk in during any of our normal hours of operation. **Appointments are not required for the Math Center.**

Growth Mindset:

There is scientific evidence that **neural connections grow and become stronger** the more you struggle with learning and correct your mistakes. Based on research by Stanford Professor Carol Dweck and her colleagues, we know that students with a **growth mindset - the belief that intelligence is not just something that you are born with** - have higher levels of success than those with a fixed mindset.

Tentative Course Schedule and Topics:

Week	Sections	Topics	Homework
Week 1	1.1-1.6	Review	
Week 2	2.1 -2.3	Limits	HW 1(Pre-Test) - Due
Week 3	2.4-2.5	Continuity	HW 2 - Due
Week 4	3.1	Definition of derivative	HW 3 - Due
Week 5	3.2-3.3	Product and quotient rules	HW 4 - Due
Week 6	3.4	Chain rule & transcendental functions (**Exam 1**)	HW 5 - Due
Week 7	3.5-3.6	Implicit & logarithmic differentiation	HW 6 - Due
Week 8	3.7	Related rates	HW 7 - Due
Week 9	4.1-4.3	Extrema, increasing & decreasing	HW 8 - Due
Week 10	4.4-4.5	Concavity & the second derivative	HW 9 - Due
Week 11	4.6	Curve sketching (**Exam 2**)	HW 10 - Due
Week 12	4.7	Optimization problems	HW 11 - Due
Week 13	5.1-5.2	Antiderivatives and indefinite integration	HW 12 - Due
Week 14	5.3-5.4	Fundamental theorem of calculus	HW 13 - Due
Week 15	5.5	u-Substitutions	HW 14 - Due
Finals Week		**Final exam**	HW 15(Post-test) - Due