

COURSE SYLLABUS
MATH 2385, Section 01
FUNDAMENTALS OF CALCULUS
CREDIT HOURS: 3
Fall 2017

CLASSROOM AND SCHEDULE: Lee Drain Building, Room 407
Monday & Wednesday, 8:00 – 9:20 a.m.

INSTRUCTOR INFORMATION:

Dr. Dustin L. Jones

Office: Room 421C Lee Drain Building Phone: 936-294-4776 Fax: 936-294-1882

Email: DLJones@shsu.edu

Office hours: Mondays, Wednesdays, & Fridays 9:30 – 10 a.m. Tuesdays & Thursdays, 9 – 10 a.m.
Other times available by appointment

COURSE DESCRIPTION: This course is an introduction to the concepts and applications of calculus to topics in middle school mathematics. Prerequisite: C or better in MATH 2384.

COURSE OBJECTIVES: Upon completion of this course, students will be able to:

- Understand and apply the conceptual foundations of calculus related to topics in middle school mathematics.
- Relate topics in middle school mathematics to the concept of limit in sequences and series.
- Relate the concept of average rate of change to the slope of a secant line and instantaneous rate of change to the slope of the tangent line.
- Relate topics in middle school mathematics to the area under a curve.
- Demonstrate an understanding of the use of calculus concepts to answer questions about rates of change, areas, volumes, and properties of functions and their graphs.
- Develop a broader understanding and appreciation of calculus as it relates to middle school mathematics.

REQUIRED TEXTBOOK: *Calculus for Middle-Grades Teachers: Limits, Derivatives, and Integrals with Technology* by Dustin L. Jones. This book is currently in a draft form. Information about obtaining the book will be posted on Blackboard.

TECHNOLOGY:

- Handheld graphing calculator: TI-83/84/84+ or NSpire
- Spreadsheet – such as Microsoft Excel or Google Sheets, available through SHSU or online
- GeoGebra – free download available from www.geogebra.org
- Desmos graphing calculator – freely available from www.desmos.com

BLACKBOARD: Up-to-date course information will be posted on Blackboard, including deadlines, notes, and assignments. **Please check Blackboard regularly.**

ASSIGNMENTS: There will be three types of assignments: In-class group assignments, in-class individual assignments, and homework assignments. Some (but not all) of these assignments will be collected for credit. *Understanding the homework problems is essential for passing this course.* **Late assignments do not exist.**

EXAMS AND QUIZZES: There will be two exams, three quizzes, and one final exam. If a student must miss a class during which an exam is scheduled, he or she should notify the instructor in advance. The instructor, at his discretion, may allow the student to take the exam early. Any missed exams or quizzes will result in a grade of 0. See the tentative schedule for dates.

The final exam is comprehensive and will be held on **Monday, December 4, 8:00 –10:00 a.m.**

ATTENDANCE POLICY: Attendance is *extremely* important. Regular and punctual attendance is expected. Course grades may be lowered up to one-half letter grade for each absence in excess of two class periods. Serious health or family problems that are well documented will be handled individually.

COURSE EVALUATION: Each student's grade will be based on the following:

Assignments (in-class and homework)	150 points
Exams (2 at 75 points each)	150 points
Quiz	40 points
Final Exam	110 points
Total possible	450 points

Grading Scale

Points earned	405-450	360-404	315-359	270-314	less than 270
Course grade	A	B	C	D	F

ACADEMIC DISHONESTY: All students are expected 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. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

CLASSROOM RULES OF CONDUCT: Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones and pagers must be turned off and stored out of sight before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers and magazines, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

TELEPHONES AND MESSAGING DEVICES: The use by students of electronic devices that perform the function of a telephone or text messenger during class-time is **prohibited**. Arrangements for handling potential emergency situations may be granted at the discretion of the instructor. *Failure to comply with this policy could result in expulsion from the classroom or with multiple offenses, failure of the course.* Any use of a telephone or text messenger or any device that performs these functions during a test period is prohibited. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used by the student. Even the visible presence of such a device during the test period will result in a zero for that test. Use of these devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty.

STUDENTS WITH DISABILITIES POLICY: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see <http://www.shsu.edu/dept/academic-affairs/aps/aps-students.html>

STUDENT ABSENCES ON RELIGIOUS HOLY DAYS: University policy states that a student who is absent from class for the observance of a religious holy day must be allowed to take the examination or complete an assignment scheduled for that day within a reasonable time after the absence. Students will be excused to travel for observance of a religious holy day. A student who wishes to be excused for a religious holy day must present the instructor with a written statement describing the holy day(s) and the travel involved. The instructor will then provide the student with a written description of the deadline for the completion of missed exams or assignments.

VISITORS IN THE CLASSROOM: Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom. This policy is not intended to discourage the occasional visiting of classes by responsible persons. Obviously, however, the visiting of a particular class should be occasional and not regular, and it should in no way constitute interference with registered members of the class or the educational process.

COPYRIGHT POLICY: All printed materials disseminated in class or on the web are protected by Copyright laws. One photocopy (or download from the web) is allowed for personal use. The making of multiple copies or sale of any of these materials is strictly prohibited.

TENTATIVE SCHEDULE

<i>Mondays</i>		<i>Wednesdays</i>	
		Aug. 23	0.2 To the Student 0.3 Technology Tools
Aug. 28	NO CLASS MEETING (Harvey)	Aug. 30	NO CLASS MEETING (Harvey)
Sep. 4	NO CLASS MEETING (Labor Day)	Sep. 6	1.1 Sequences & Series 1.2 Infinite Geometric Series
Sep. 11	1.3 Repeating Decimals	Sep. 13	1.4 Perimeter of a Circle 1.5 Location of a Hole in a Graph
Sep. 18	2.1 Measuring Speed	Sep. 20	2.2 The Derivative at a Point
Sep. 25	2.3 The Derivative Function	Sep. 27	2.4 Interpretations of the Derivative
Oct. 2	2.5 The Second Derivative	Oct. 4	EXAM 1
Oct. 9	3.1 Measuring Distance Traveled	Oct. 11	3.2 The Definite Integral
Oct. 16	3.3 Area Between Curves	Oct. 18	3.4 Interpretations of the Definite Integral
Oct. 23	3.5 Theorems about Definite Integrals	Oct. 25	3.5 Theorems about Definite Integrals
Oct. 30	EXAM 2	Nov. 1	4.1 Derivatives of Powers and Polynomials
Nov. 6	4.2 Derivatives of Exponential Functions	Nov. 8	4.4 Antiderivatives
Nov. 13	4.5 The Fundamental Theorem of Calculus	Nov. 15	4.5 The Fundamental Theorem of Calculus QUIZ 1
Nov. 20	5.1 Area of a Circle 5.2 Extrema	Nov. 22	NO CLASS MEETING (Thanksgiving)
Nov. 27	5.3 Optimization	Nov. 29	5.5 Solids of Revolution: Volume
Dec. 4	FINAL EXAM 8:00 – 10:00 A.M.		

SYLLABUS REVISIONS: The instructor reserves the right to revise any part of this syllabus as deemed necessary throughout the semester. Revision, if necessary, will be announced during class.