

## Syllabus for Math 131 Fall 2016

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Office Hours: Tues & Thurs 9:30-11:30 Wed 9-11:30

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**Text:** Single Variable Calculus Concepts and Contexts 4<sup>th</sup> ed. by James Stewart The text is online and you paid for it when you paid your fees. It is found at the homework website as discussed below. Purchasing a hardcopy is optional.

**Catalog Title and Description:** (Credit 3.0) Limits and continuity. Rates of change, slope. Differentiation: the derivative, maxima and minima. Integration: the definite and indefinite integration techniques, curve fitting.

**Calculator:** You are required to have one of TI-83, TI 83+, TI84, TI 84+, or TI Inspire nonCAS. You will be allowed to use this calculator on most assignments, quizzes and exams. You are required to check your TAMU e-mail daily. I will also announce in class any information I send through e-mails. Bring your calculator to class each day since calculator instructions will be demonstrated in class.

**Make-up Policy:** No make-ups will be given without written evidence of an official University excused absence. I do not accept the TAMU Explanatory Statement for absences.

**Quizzes:** There will be quizzes which might or might not be announced as we cover the material. Some will be take home and others in class.

**Your Grade:** You will have 3 major exams worth 100 points each and a comprehensive final worth 150 points. On-line homework is required in this course and is worth 60 points. Quizzes total 90 points. . This makes a total of 600 points. If the %-age on the final exam is higher than your lowest exam score, I will replace that exam score with the %-age on the final.

540-600 points is an A, 480-539 points is a B, 420-479 points is a C, 360-419 points is a D, and below 360 points is an F. Any curving will be done on the overall totals at the end.

**Scholastic Dishonesty:** Copying on in-class exams or quizzes will not be tolerated and will be prosecuted to the full extent allowed by University policy. Storing formulas or unauthorized programs in your calculator is also an act of scholastic dishonesty and will be treated as such.

“An Aggie does not lie, cheat, or steal or tolerate those who do”

Please refer to Honor Council Rules and Procedures at <http://www.tamu.edu/aggiehonor> for more information on academic integrity and scholastic dishonesty.

**ADA Policy Statement:** The Americans with Disabilities Act is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services in room B118 of Cain Hall or call 845-1637. For additional information visit <http://disability.tamu.edu>

**Learning Outcomes:**

- ☒ Logically formulate mathematical variables and equations to quantitatively create mathematical models representing problems in everyday life.
- ☒ Recognize and construct graphs of basic functions, including polynomials, exponentials, logarithms, and trigonometric functions and use them to model real-life situations.
- ☒ Identify patterns in numeric data to calculate limits and derivatives of functions numerically.
- ☒ Compute limits of functions numerically, graphically, and algebraically.
- ☒ Justify whether a function is continuous or not using the mathematical definition of continuity.
- ☒ Compute derivatives using the limit definition of the derivative.
- ☒ Understand the derivative as a rate of change in order to quantitatively apply it to everyday life. For example, recognize that derivatives can be used to find the velocity and acceleration of an object given its position function.
- ☒ Compute derivatives of polynomials, rational, trigonometric, exponential, and logarithmic functions.
- ☒ Apply the product rule, quotient rule, and chain rule to take derivatives of compositions of functions.
- ☒ Compute the linear approximation of a function and use it in applications of approximation and error estimation.
- ☒ Investigate the relationship between a function and its first and second derivatives, and use the information obtained from its derivatives to identify pertinent information about the function.
- ☒ Find the local and absolute extrema of functions, including optimization applications such as minimizing the cost of fencing in a particular area of land.
- ☒ Compute antiderivatives and understand the concept of integration as it relates to area.
- ☒ Apply the definite integral to quantitatively determine solutions to problems in everyday life including areas between curves, average value of a function, and total distance traveled.
- ☒ Recognize and appreciate the derivative (rate of change) and the definite integral (accumulation of change) and utilize the Fundamental Theorem of Calculus as the bridge between the two.
- ☒ Apply the substitution method to compute integrals.

Tentative schedule:

Week of	Sections
Aug 29-Sept 2	1.1, 1.2, 1.3
Sept 5-Sept 9	1.5, 1.6, 2.1
Sept 12-Sept 16	2.2, 2.3, 2.4
Sept 19-Sept 23	2.5, Review, Exam 1 on Thurs Sept 22
Sept 26-Sept 30	2.6, 2.7, 2.8
Oct 3-Oct 7	3.1, 3.2, 3.3
Oct 10-Oct 14	3.4, 3.6, 3.7
Oct 17-Oct 21	3.8, Review, Exam 2 on Thurs Oct 20
Oct 24 – Oct 28	4.2, 4.3, 4.6
Oct 31-Nov 4	4.8, 5.1, 5.2
Nov 7-Nov 11	5.3, 5.4, 5.5
Nov 14- Nov 18	6.1, 6.5
Nov 22	6.7 Thanksgiving is Nov 24, Nov 24 & 25 are holidays
Nov 28- Dec 2	Review, Exam 3 on Thurs Dec 1
Dec 6	Review for Final Exam

Class Time	Final Exam
12:45-2:00	Wed, Dec 14 8:00-10:00 am
3:55-5:10	Tues, Dec 13 1:00-3:00 pm