

MATH 1413  
Survey of Calculus  
Section 03  
MWF 11:00-11:52, Boyd Lecture

Instructor: Scott Sykes  
Office: Boyd 314  
Office Hours: Monday 9:00-11:00  
Tuesday 9:00-12:00  
Wednesday 9:00-11:00  
Friday 9:00-11:00, 1:30-2:30  
or by appointment  
Office Phone: 678-839-4125  
Email: [ssykes@westga.edu](mailto:ssykes@westga.edu)

**Text:** Bittinger, Ellenbogen and Surgent, *Calculus and Its Applications*, 10th Edition, Addison Wesley. **You will also need to have an access code for MyMathLab.** If you do not want to buy the book, you can just purchase an access code to MyMathLab and there will be an online copy of the book available with that.

**TESTS:** There will be exams on the following dates:  
Friday, February 5  
Wednesday, February 24  
Friday, March 25  
Friday, April 15

**FINAL:** The final is on **Friday, April 29<sup>th</sup> from 11:00-1:30.** The final counts as two tests.

If you need to miss a test, you must talk to me before the test is given and get my permission. If you miss the test without permission, that will count as a 0!!

**Any cases of academic dishonesty will result in an F for the course and referral based on university policy.**

For additional information about all your courses, go to  
[http://www.westga.edu/assetsDept/vpaa/Common\\_Language\\_for\\_Course\\_Syllabi.pdf](http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf)

**MyMathLab:** You must have an access code for MyMathLab (available from the bookstore or online at [www.mymathlab.com](http://www.mymathlab.com) and click Register...if you bought a new book at the bookstore there should be an access code included).

**\*\*\*\*You will need the following course code to register: sykes25783\*\*\*\***

Most Fridays (see attached schedule) there will be an online quiz available on MyMathLab. You will have from Friday until the following Wednesday at 11:59pm to take the quiz. You can attempt the quiz up to 3 times but only your last score will be counted. Your average of the 10 quizzes will count as one test towards your final grade in the course. **THIS GRADE CANNOT BE DROPPED.**

**CLASS:** You are expected to attend class on a regular basis. Occasionally, in class, you will be given time to work on problems. During these times, you can work with others or by yourself but you must be working on the problems assigned and not work from other classes, homework or talking!! Occasionally, points will be awarded for doing work on these problems.

**CALCULATORS:** You are required to have a graphing calculator. I will be using a TI-83, but TI-85 and TI-86 are also acceptable. You cannot have a calculator with a CAS on it such as the TI-89 or TI-92. If you are unsure, ask me **BEFORE** you show up to a test with a calculator that I will not allow!!

**GRADES:** You can drop your lowest score as described above and add the other 6 together plus any bonus awarded in class to get your total score in the class. Note that there are 7 scores coming from 4 tests, 2 for the final and MyMathLab– one is dropped but it cannot be MyMathLab score. You can drop one of the two scores for the final – but it still counts as 1/6<sup>th</sup> of your grade!!!

<u>POINTS</u>	<u>GRADE</u>
540-600	A
480-539	B
420-479	C
360-419	D
0-359	F

If you ever have any questions or suggestions, feel free to come by my office at any time. I will definitely be there during my office hours, you can just stop by. You can also stop by or call to see if I am there at other times.

Important Dates:

	Available (Friday)	Must be Done by (Wednesday at 11:59 pm)
Quiz 1	Jan 15	Jan 20
Quiz 2	Jan 22	Jan 27
Quiz 3	Jan 29	Feb 3
	TEST 1: FEB 5	
Quiz 4	Feb 12	Feb 17
Quiz 5	Feb 19	Feb 24
	TEST 2: FEB 24 <<<This is a Wednesday!!	
	**Thursday, March 3 is the last day to withdrawal with a grade of W**	
Quiz 6	March 4	March 9
Quiz 7	March 11	March 23
	TEST 3: MARCH 25	
Quiz 8	April 1	April 6
Quiz 9	April 8	April 13
	TEST 4: APRIL 15	
Quiz 10	April 20 *WED*	April 24 *SUN*

FINAL: FRI APRIL 29, 11:00-1:30

**Course Title:** Survey of Calculus

**Hours Credit:** 3 hours

**Prerequisites:** MATH 1111 or MATH 1113

**Course Description:** This course will provide a survey of the differential and integral calculus of polynomial, rational, exponential, and logarithmic functions with an emphasis on applications to problems from business, economics and life sciences.

**Text:** Bittinger & Ellenbogen, *Calculus and Its Applications*, 9th Edition, Addison Wesley.

**Learning Outcomes:**

1. The student will be able to compute limits.
2. The student will be able to differentiate polynomial, rational, exponential, and logarithmic functions.
3. The student will be able to apply differential calculus to problems from business, economics, and life science.
4. The student will be able to integrate polynomial, rational, exponential, and logarithmic functions and to apply the Fundamental Theorem of Calculus.
5. The student will be able to apply integral calculus to problems from business, economics, and life science.
6. The student will understand the basic techniques of integration.

**Topics:** The following sections of the textbook will be covered:

**Section**

- 1.1 Limits: A Numerical and Graphical Approach
- 1.2 Algebraic Limits and Continuity
- 1.3 Average Rates of Change
- 1.4 Differentiation Using Limits of Difference Quotients
- 1.5 Differentiation Techniques: The Power and Sum-Difference Rules
- 1.6 Differentiation Techniques: The Product and Quotient Rules
- 1.7 The Chain Rule
- 1.8 Higher-Order Derivatives
- 2.1 Using First Derivative to Find Maximum and Minimum Values and Sketch Graphs
- 2.2 Using Second Derivative to Find Maximum and Minimum Values and Sketch Graphs
- 2.4 Using Derivatives to Find Absolute Maximum and Minimum Values
- 2.5 Maximum-Minimum Problems: Business and Economic Applications
- 2.6 Marginals and Differentials
- 2.7 Implicit Differentiation and Related Rates
- 3.1 Exponential Functions
- 3.2 Logarithmic Functions
- 3.3 Applications: The Uninhibited Growth Model  $dp/dt=kP$
- 3.4 Applications: Decay
- 3.6 An Economics Application: Elasticity of Demand
- 4.1 The Area under a Graph
- 4.2 Area, Antiderivatives and Integrals
- 4.3 Area and Definite Integrals
- 4.5 Integration Techniques: Substitution
- 5.1 An Economics Application: Consumer Surplus and Producer Surplus