MATH 1413
Survey of Calculus
Section 01
Mon, Wed, Fri 11:00-11:50, 301 Boyd
Prerequisites: Math 1111 or Math 1113

Instructor: Scott Sykes
Office: Boyd 314
Office Phone: 678-839-4125
Email: ssykes@westga.edu
OFFICE HOURS: Monday: 12:15-1:15, 2:15-4:15
Wednesday: 12:15-1:15, 2:15-3:15

Text: Bittinger, Ellenbogen and Surgent, Calculus and Its Applications, 11th 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:
Monday, January 27
Monday, February 24
Monday, March 30
Friday, April 24

FINAL: The final is on Friday, May 1, 11:00-1:00. 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

HOMEWORK: Most Mondays there will be homework assigned. Some of these may be online and require a MyOpenMath account – which is free. The homework is due Friday. You will get a 0 for any assignments not turned in by the due date. The average of your homework will count as 1 test score.

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 homework. You can drop one of the two scores for the final – but it still counts as 1/6th of your grade!!!

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<thead>
<tr>
<th>POINTS</th>
<th>GRADE</th>
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<tbody>
<tr>
<td>540-600</td>
<td>A</td>
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<tr>
<td>480-539</td>
<td>B</td>
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<tr>
<td>420-479</td>
<td>C</td>
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<tr>
<td>360-419</td>
<td>D</td>
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<tr>
<td>0-359</td>
<td>F</td>
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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.

**First Day of Class:** Monday, January 6
**Drop Ends:** Friday, January 10
**Last Day to Withdrawal with W:** Friday, February 28
**Last Day of Class:** Monday, April 27

**No classes:**
- Monday, January 20 (MLK Day)
- Monday March 16 - Friday March 20 (Spring Break)
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.


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 Elasticity of Demand
2.8 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
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 Consumer and Producer Surplus