

**MATH 1413-Online: Survey of Calculus
Summer Semester 2017**

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Online Office Hours: Tuesday 10am-11am and Thursday 2pm-3pm.
If you would like to talk to me but cannot make it during one of these times, please make an appointment.

Hours Credit: 3 hours

Class Type: This class is 95% or more online

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 and Surgent, *Calculus and Its Applications*, 10th Edition, Addison Wesley.

Learning Outcomes:

1. The student will be able to compute limits (L1).
2. The student will be able to differentiate polynomial, rational, exponential, and logarithmic functions (L1).
3. The student will be able to apply differential calculus to problems from business, economics, and life science (L1).
4. The student will be able to integrate polynomial, rational, exponential, and logarithmic functions and to apply the Fundamental Theorem of Calculus (L1).
5. The student will be able to apply integral calculus to problems from business, economics, and life science (L1).
6. The student will understand the basic techniques of integration (L1).

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, Anti-derivatives and Integrals
- 4.3 Area and Definite Integrals
- 4.5 Integration Techniques: Substitution
- 5.1 An Economics Application: Consumer Surplus and Producer Surplus

Calculators: You are not allowed to use “**advanced**” calculators such as TI-84 or better in your final exam.

Homework: I will upload homework problems that are not to be turned in and graded but that are meant to reflect the sort of questions you can expect in quizzes, tests and the final exam. I encourage you to use my online office hours or send emails if you have any questions.

The following problems have been chosen from your textbook. You are encouraged to look at these problems as well. Most of these problems are similar to the ones uploaded to CourseDen.

Section	Problems
1.1	1-4,11-44,61-68
1.2	9-31, 37, 38, 43- 62
1.3	1-6, 9-14, 17-34
1.4	1-14, 17-22, 25,26, 29-31
1.5	1-86
1.6	1-12, 21-36, 97-109
1.7	1-60, 71-80
1.8	1-20, 25-34, 37-44
2.1	1-20, 69-84
2.2	1-20, 47-54, 101-104
2.4	3-20, 49-52, 97-104
2.5	1-2, 5-10, 17-18, 23-44
2.6	1-22, 24-26
2.7	1-24, 31-38
3.1	11-40, 55-60, 81-88
3.2	43-62, 69-81
3.3	1-4, 7-16
3.4	16-24
3.6	1-4, 13-16
4.1	21-30
4.2	1-46, 59-66
4.3	1-14, 25-32, 43-56, 59-66
4.5	1-24, 43-50, 62-64
5.1	1-10

Quizzes: There will be weekly quizzes (thirteen quizzes all together; usually two quizzes each week). Each quiz will be worth 2% toward your final grade. All quizzes are online.

Tests: There will be two tests. Each will be worth 17%.

Test 1: Wednesday June 14 – Friday June 16, 2017

Test 2: Sunday July 2 – Tuesday July 4, 2017

(Tests dates are subject to change.)

Proctored Final exam: The final exam will be on Thursday July 20 at 3pm. The final exam is worth 40% toward your final grade.

The dates for tests and final exam are subject to change.

Grading Scale: A: 90-100%, B: 80-89%, C: 70-79%, D: 60-69%, F: 0-59%.

Grading: Your final grade will be determined as follows: Quizzes: 26%, Test One: 17%, Test Two: 17% and Final exam: 40%.

Students, please carefully review the following information at this link http://www.westga.edu/assets/Dept/vpaa/Common_Language_for_Course_Syllabi.pdf. It contains important material pertaining to your rights and responsibilities in this class. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester.

ACADEMIC DISHONESTY

Academic dishonesty is NOT tolerated. It will result in failure on assignment(s) as well as possible disciplinary sanction(s) as stipulated by university rules. The University of West Georgia Student Conduct Code defines academic dishonesty as cheating, fabrication, plagiarism, and facilitating or allowing academic dishonesty in any academic exercise.

Cheating: Using or attempting to use unauthorized materials, information or study aids;

Fabrication: Falsification or unauthorized invention of any information or citation;

Plagiarism: Representing the words or ideas of another as one's own. Direct quotations must be indicated and ideas of another must be appropriately acknowledged.

Academic dishonesty in any form compromises your grade and lowers the quality of your diploma. A fellow student who cheats may actually lower your grade, sometimes causing unfair and inflated grading scales. I hope each of you values your college education enough to protect yourself from dishonest classmates.

Help! I can't get Vista to work!

If you experience problems using Vista do not panic! Please use the support link below:

<http://webct.westga.edu/>

UWG strives to solve all Vista related problems within 48 hours.

While UWG will do their part to help you resolve problems and other situation regarding Vista you do have some responsibilities.

1. You must seek help. See the link above.

2. Do not wait 2-3 days to report a problem. Do it immediately!
3. Notify me if your problems have not been resolved within 2 business days.
4. Have an alternate computer access plan.

If your ISP suddenly goes out of business, or your disk crashes, or your puppy chews up your modem, or you experience some other personal hardware issue, you are responsible for *having an emergency alternative computer access plan*. Know in advance where you can go (library, Internet cafe, friend's house, workplace) if your primary system fails!

5. If you are experiencing technical issues with CourseDen (not your computer /ISP) that are preventing you from turning in an assignment, responding to mail/discussions, or taking an assessment you have 2 responsibilities:

1. Contact the service desk by phone: 678-839-6587 or email: http://www.westga.edu/infosec/index_18474.php
2. Notify me via mail, personal email, or phone

Attendance/Participation Policy

Students in an online course are expected to login a minimum of 3 times a week. My recommendation for doing well in this course is to login daily to check for new discussions, emails, announcements, etc.

If you are having trouble please contact me and talk with me rather than just dropping off the face of the earth! I want you to pass this class-- actually I want you to do more than pass-- I want you to love this class so much that you decide to study business in the future! When responding to discussion questions your response must be well thought out and of academic interest. A response of simply "I agree" or the like will not be counted as a response.

Library Resources

UWG students have access to many online resources through the UWG Library.

<http://www.westga.edu/library/>

ADA

AMERICANS WITH DISABILITIES ACT STATEMENT

If you are a student who is disabled as defined under the Americans with Disabilities Act and requires assistance or support services, please seek assistance through the Center for Disability Services. A CDS Counselor will coordinate those services.

Affirmative Action Statement

University of West Georgia adheres to affirmative action policies to promote diversity and equal opportunity for all faculty and students.

Equal Opportunity Statement

No person shall, on the grounds of race, color, sex, religion, creed, national origin, age, or disability, be excluded from employment or participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity conducted by UWG.