MATH 1413 – Survey of Calculus (Section 05) Spring 2018

TR 12:30 pm – 1:45 pm 117 Adamson Hall

Prerequisites: MATH 1113 or MATH 1111 or MAT 151 (Minimum Grade: C).

Instructor: Dr. Rui Xu
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Office hours: TR 10:00 – 12:30 pm or by appointment.

Textbook: Bittinger & Ellenbogen, *Calculus and Its Applications*, 11th Edition, Addison Wesley.

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.

Topics: Limits: A Numerical and Graphical Approach; Algebraic Limits and Continuity; Average Rates of Change; Differentiation Using Limits of Difference Quotients; Differentiation Techniques: The Power and Sum-Difference Rules; Differentiation Techniques: The Product and Quotient Rules; The Chain Rule; Higher-Order Derivatives; Using First Derivative to Find Maximum and Minimum Values and Sketch Graphs; Using Second Derivative to Find Maximum and Minimum Values and Sketch Graphs; Using Derivatives to Find Absolute Maximum and Minimum Values; Maximum-Minimum Problems: Business and Economic Applications; Marginals and Differentials; Implicit Differentiation and Related Rates; Exponential Functions; Logarithmic Functions; An Economics Application: Elasticity of Demand; Area, Antiderivatives and Integrals; Area and Definite Integrals; Integration Techniques: Substitution; An Economics Application: Consumer Surplus, Producer Surplus (time permitting)

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.

Grading Methods: Grades will be assessed based on a total of 678 points (as shown below), using the standard decade scale: (90–100%=A, 80–89%=B, 70–79%=C , 60–69%=D, below 60%=F).

Test 1 January 30	100 pts
Test 2 February 22	100 pts
Test 3 March 29	100 pts
Test 4 April 26	100 pts
Final (Comprehensive) May 3rd, 11:00 am-1:00 pm	150 pts
Homework	108 pts
Attendance	20 pts
Total	**678 pts**

Homework & Test policy: There will be one homework assignment for each section. The lowest 3 homework scores will be dropped. Makeup tests will be granted only for excused absences (scheduled University-approved activities such as field trips, debate trips, choir trips, and athletic contests, or verifiable medical doctor's excuse). In that case, the student is required to contact the instructor in advance to reschedule the makeup test. If that is impossible, the student must contact the instructor the same day of the test by email or phone to let the instructor know. All students are required to take the final exam at the scheduled time and no makeup for final exam.

Other Policies:

1. Class attendance will be taken every class day. Tardies and early leaves are not allowed. Students are allowed to miss at most 3 classes to get the full 20 pts for attendance and will lose 5 pts for each additional absence.

2. Cell phones should be set to an inaudible setting.

3. The instructor follows the common university policies as shown on the website below:

http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf

Important Dates:

Jan 6-10	: Open Drop ends at 11:59 pm January 10th
Jan 6-11	: Open Add ends at 11:59 pm January 11th
Jan 15	: MLK Day Holiday, no classes, offices closed
Feb 28	: Last day to withdraw with a grade of W
Mar 19-24	: Spring Break (no classes)
April 26	: Last Day of Class
May 3rd (Thursday)	: Final Exam 11:00 am–1:00 pm