

Math 1309 – May 2017
MTuWThF (9:00 am – 11:00 am; 12:00 pm – 2:00 pm)
Room TBA

Instructor: Ms. Carol Seets **Office:** 216 Clements Hall **Office Hours:** 8:00 am – 8:45 ; 2:00 pm – 3:00

Phone: 214 – 768 – 3651 **e-mail:** cseets@mail.smu.edu **Assignments:** Assignment Sheet

Math 1309 is a prerequisite to Business Statistics and Accounting I and satisfies the Quantitative Foundations requirement (University Curriculum 2012/2016)

- A student who does not complete this course before next fall will be unable to enroll in either statistics or accounting.
- As a result, the student will not be able to enter the Business School in the spring of the next year as expected.
- Taking the class during the May Term instead of summer school allows a student to pursue other opportunities in the summer such as a summer job, an internship or study abroad.

Text: *Applied Mathematics for the Managerial, Life and Social Sciences*; Soo T. Tan; 7th Edition (2016,2013), Brooks/Cole (Cengage Learning).

Calculator: Graphing calculators are required for work in this course (but you will not be given credit unless you show work appropriate to correct solution in a neat and logical manner).

Grading:

1. Quizzes (10%): These are group quizzes and you may use your books and notes.
2. Tests (90%): You must take each of the four tests in class on the scheduled date.

Class Policies:

1. You are expected to be in class each day (and on time). Absences and tardiness are unacceptable. Please remain in class until you are dismissed.
2. Please stay focused on this course—do not read other material, sleep, or talk during class.
3. The academic work in this course will be subject to the guidelines of the SMU Honor Code.
4. There will be **no make-up work** of quizzes or tests. All work must be turned in on time!

Disability Accommodations: Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit <http://www.smu.edu/Provost/ALEC/DASS> to begin the process. Once registered, students should then schedule an appointment with the professor as early in the semester as possible, present a DASS Accommodation Letter, and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

Religious Observance: Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities: Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)

“Campus Carry” Law: “In accordance with Texas Senate Bill 11, also known as the “campus carry” law, following consultation with entire University community SMU determined to remain a weapons-free campus. Specifically, SMU prohibits possession of weapons (either openly or in a concealed manner) on campus. For more information, please see: http://www.smu.edu/BusinessFinance/Police/Weapons_Policy.”

Test Dates (tentative):

- Test #1: Monday, May 22
- Test #2: Wednesday, May 24
- Test #3: Tuesday, May 30
- Test #4: Thursday, June 1
- Test #5: Friday, June 2

Course Description

Students will work with derivatives and integrals of algebraic, logarithmic, and exponential functions with applications to the time value of money, curve-sketching, maximum-minimum problems, and computation of areas. Students will concentrate on these topics as they apply to business and economics.

Prerequisite: Placement out of Math 1303 or a C- or higher in Math 1303.

Goals: This course satisfies the Quantitative Foundations Requirement

- **SLO #1:** Students will be able to solve problems using algebraic, geometric, calculus, statistical and/or computational methods.
- **SLO #2:** Students will be able to interpret and/or draw inferences from mathematical models, data, graphs, or formulas.

Unit I: Limits and the Derivative

- Introduction to Limits
- Limits
- One-sided Limits
- Continuity
- The Derivative
- Basic Rules of Differentiation
- Product and Quotient Rules
- Higher Order Derivatives
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Unit II: Additional Derivative Topics

- The Chain Rule
- Differentiation of Exponential and Logarithmic Functions
- Marginal Functions in Economics
- Functions of Several Variables
- Partial Derivatives

Unit III: Graphing and Optimization

- Applications of the 1st Derivative
- Applications of the 2nd Derivative
- Curve Sketching
- Optimization

Unit IV: Integration

- Antiderivatives and Rules of Integration
- Integration by Substitution
- The Fundamental Theorem of Calculus
- Evaluating Definite Integrals
- Area Between Curves

Unit V: Math of Finance

- Compound Interest
- Annuities
- Amortization and Annuities
- Applications in Business and Economics

You will need a graphing calculator for this class!

| Class # | Day | Date | Discussion Topic | Suggested Exercises |
|---------|-------|------------------|--|--|
| 01 | Thurs | May 18 9 - 11 | First day of class 9.1: Introduction to Limits | Page 608 (1, 5, 9, 13, 17, 23, 27, 31, 35, 39, 51, 55, 63, 65, 73, 77, 83) |
| | Thurs | May 18 12 - 2 | 9.2: One-sided Limits and Continuity 9.3: The Derivative | Page 622 (1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 39, 41, 43, 45, 47, 49, 51, 53, 67) Page 642 (3, 11, 15, 21, 25, 37) **Quiz #1 is due today! |
| 02 | Fri | May 19 9 - 11 | 9.4: Basic Rules of Differentiation 9.5: Product and Quotient Rules, Higher Order Derivatives | Page 655 (3, 7, 11, 15, 19, 23, 27, 31, 35, 41, 45, 47, 57, 63, 71) **Quiz #2 is due today! Page 670 (1, 5, 9, 13, 19, 23, 27, 39, 41, 43, 47, 49, 63) **Quiz #3 is due today |
| | Fri | May 19 12 - 2 | Review for Test #1 | Review sheet on Canvas |
| 03 | Mon | May 22 9 - 11 | Test #1 | |
| | Mon | May 22 12 - 2 | 9.6: The Chain Rule 9.7: Differentiation of Exponential and Logarithmic Functions | Page 684 (1, 5, 7, 11, 15, 19, 29, 31, 33, 37, 41, 65, 67) Page 696 (1, 7, 9, 15, 21, 25, 33, 35, 39, 45, 47, 49, 51, 57, 61, 69) **Quiz #4 is due today! |
| 04 | Tues | May 23 9 - 11 | 9.8: Marginal Functions in Economics | Page 708 (3, 5, 9, 13(a, b, c)) **Quiz #5 is due today! |
| | Tues | May 23 12 - 2 | 12.1: Functions of Several Variables 12.2: Partial Derivatives | Page 909 (39a, 41a, 47) Page 922 (3, 7, 11, 15, 19, 25, 29, 43, 45, 49) **Quiz #6 is due today! |
| 05 | Wed | May 24 9 - 11 | Review for Test #2 | Review sheet on Canvas |
| | Wed | May 24 12 - 2 | Test #2 | |
| 06 | Thurs | May 25 9 - 11 | 10.1: Applications of the First Derivative 10.2: Applications of the Second Derivative | Page 731 (9, 15, 19, 20, 37, 39, 58, 67, 74, 78, 80, 83, 95) Page 750 (11, 13, 29, 41, 51, 55, 59, 63, 85, 87, 89, 91, 95, 101) |
| | Thurs | May 25 12 - 2 | 10.3: Curve Sketching 10.4: Optimization I | Page 766 (13, 17, 21, 25, 33, 35, 39, 51, 57, 59) Page 753 (67, 73, 77, 81, 83) Page 781 (9, 13, 17, 23, 29, 35, 48, 50, 64) ** Quiz #7 is due today! |
| 07 | Fri | May 26 9 - 11 | 10.5: Optimization II | Page 794 (5, 10, 19, 21, 33) **Quiz #8 is due today! |
| | Fri | May 26 12 - 2 | Review for Test #3 | Review sheet on Canvas |
| | Mon | May 29 | No Class Today | MLK Holiday |
| 08 | Tues | May 30 9 - 11 | Test #3 | |
| | Tues | May 30 12 - 2 | 11.1: Antiderivatives and Rules of Integration 11.2: Integration by Substitution | Page 816 (11, 15, 19, 23, 27, 31, 35, 39, 43, 47, 53, 57, 61, 81) Page 828 (1, 5, 17, 23, 29, 35, 45, 49, 58, 63) **Quiz #9 is due today! |

| Class # | Day | Date | Discussion Topic | Suggested Exercises |
|---------|-------|------------------|---|--|
| 09 | Wed | May 31 9 - 11 | 11.4: The Fundamental Theorem of Calculus 11.5: Evaluating Definite Integrals 11.6: Area Between Curves | Page 851 (5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 43, 45, 53) Page 861 (1, 7, 11, 13, 17, 21, 31, 37, 41, 50, 51, 53) Page 874 (11, 15, 19, 23, 29, 33, 35, 39) **Quiz #10 is due today! |
| | Wed | May 31 12 - 2 | Review for Test #4 | Review sheet on Canvas |
| 10 | Thurs | June 1 9 - 11 | Test #4 | |
| | Thurs | June 1 12 - 2 | 4.1: Compound Interest 4.2: Annuities 4.3: Amortization and Annuities | Page 218 (31, 35, 41, 43, 45, 53, 55, 59, 63, 71, 73) Page 232 (15, 19, 20, 23, 25, 33) Page 245 (23, 25, 27, 31, 33, 47) ** Quiz #11 is due today! |
| 11 | Fri | June 2 9 - 11 | 11.7: Applications in Business and Economics Review for Test #5 | Page 888 (1, 3, 5, 7, 11, 15, 17, 21, 25) ** Quiz #12 is due today! Review sheet on Canvas |
| | Fri | June 2 12 - 2 | Test #5 | |