



## Calculus for Business and Social Sciences MATH 1325

**Credit:** 3 semester credit hours (3 hours lecture)

**Prerequisites:** C or “better” in MATH 1314

### Course Description:

This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics, and social sciences. This course is not a substitute for MATH 2413, calculus I.

### Required Textbook and Materials:

1. MyMathLab Standalone Access Code
  - a. May be purchased online at [www.mymathlab.com](http://www.mymathlab.com)
  - b. May be purchased at a local bookstore: ISBN 032119991X
2. A basic scientific calculator: please check with your individual instructor as to the specific type of calculator required.

### Course Objectives

Upon successful completion of this course, students will:

1. Apply calculus to solve business, economics, and social sciences problems.
2. Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential functions.
3. Solve application problems involving implicit differentiation and related rates.
4. Solve optimization problems with emphasis on business and social sciences applications.
5. Determine appropriate technique(s) of integration.
6. Integrate functions using the method of integration by parts or substitution, as appropriate.
7. Solve business, economics, and social sciences applications problems using integration techniques.

### Course Outline

Chapter 1: Review

1. Linear and Quadratic Functions
  2. Rational Function
  3. Exponential Function
  4. Logarithmic Functions
- A. Chapter 2: Limits and the Derivative

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1. Limits
  2. Continuity
  3. Derivative
  4. Differentiation
  5. Marginal Analysis
- B. Chapter 3: Additional Derivative Topics
1. Compound Interest
  2. Derivative of Exponential and Logarithmic Functions
  3. Derivative of Product and Quotient
  4. The Chain Rule
- C. Chapter 4: Graphing and Optimization
1. First Derivative
  2. Second Derivative
  3. Absolute Maxima and Minima
  4. Optimization
- D. Chapter 5: Integration
1. Antiderivatives
  2. Integration by Substitution
  3. The definite Integral
  4. The fundamental Theorem
- E. Chapter 6: Additional Integration Topics
1. Area between Curves
  2. Integration by Parts
- F. Chapter 7: Multivariable Calculus
1. Functions of Several Variables
  2. Partial Derivatives

### Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

### Course Evaluation

Final grades will be calculated according to the following criteria:

Tests	60%
Comprehensive Final Exam	10%
Course Assignments	20%
Participation	10%

### **Course Requirements**

1. Attendance is mandatory.
2. The student must purchase all of the required course materials.
3. The student will be expected to have access to the Internet and a computer.
4. Additional course requirements as defined by the individual course instructor.

### **Course Policies**

1. Cheating of any kind will not be tolerated.
2. No food, drinks, or use of tobacco products in class.
3. Beepers, telephones, headphones, and any other electronic devices must be turned off while in class.
4. The students are responsible for initiating and completing the drop process. Students who stop coming to class and fail to drop the course will earn an "F" in the course.
5. Additional class policies as defined by the individual course instructor.

### **Technical Requirements (for courses using Blackboard)**

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:

[https://help.blackboard.com/en-us/Learn/9.1\\_2014\\_04/Student/015\\_Browser\\_Support/015\\_Browser\\_Support\\_Policy](https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy) A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

### **Disabilities Statement**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building. You may also visit the online resource at <http://www.lit.edu/depts/stuserv/special/defaults.aspx>

## Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu) or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

## Course Schedule

Tests and the assessment of core objectives activity will be assigned by each individual instructor.

Week of	Topic	Reference.
1	Course introduction and policies;  A Library of Elementary Functions	Syllabus, other Instructor Information Chapter 1; MyMathLab
2	A Library of Elementary Functions	Chapter 1; MyMathLab
3	A Library of Elementary Functions	Chapter 1; MyMathLab
4	Limits and the Derivative	Chapter 2; MyMathLab
5	Limits and the Derivative	Chapter 2; MyMathLab
6	Additional Derivative Topics	Chapter 3; MyMathLab
7	Additional Derivative Topics	Chapter 3; MyMathLab
8	Graphing and Optimization	Chapter 4; MyMathLab
9	Graphing and Optimization	Chapter 4; MyMathLab
10	Integration	Chapter 5; MyMathLab

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11	Integration	Chapter 5; MyMathLab
12	Additional Integration Topics	Chapter 6; MyMathLab
13	Additional Integration Topics	Chapter 6; MyMathLab
14	Multivariable Calculus	Chapter 7; MyMathLab

Week	Topic	Reference
15	Multivariable Calculus	Chapter 7; MyMathLab
16	Multivariable Calculus	Chapter 7; MyMathLab

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Final Exam is given on the date and time specified by  
The official exam schedule

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Contact information varies by instructor.