

CORE CURRICULUM COMPONENT APPLICATION
Texarkana College

Part I: Course Information

Course Type

- Existing/Restructured
 New Course

Course Prefix & Number: Math 1325

Texas Common Course Number (TCCN): 1325

Course Title: Calculus for Business and Social Sciences

Course Catalog Description

Calculus for Business & Social Sciences (3,3,1). This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions with emphasis on application in business, economics, and social sciences. This course is not a substitute for Math 2413 (Calculus I). Prerequisite: MATH 1324.

Course Prerequisites:

MATH 1324

Available Online?

- Yes
 No

Part II: THECB 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.

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Part III: THECB Skill Objectives

- 1. Critical Thinking Skills:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- 2. Communication Skills:** to include effective development, interpretation and expression of ideas through written, oral and visual communication
- 3. Empirical and Quantitative Skills:** to include applications of scientific and mathematical concepts.

Part IV: Course Student Learning Outcomes (SLO)

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.

Skill Objective:	Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
THECB Course Objective	SLO #4 Solve optimization problems with emphasis on business and social sciences applications.
Course Student Learning Outcome	SLO #4 Solve optimization problems with emphasis on business and social sciences applications.
General Learning Activities	Students will apply calculus concepts to problems related to business, economics, and social sciences in order to better understand, interpret, and extrapolate data particular to those fields. Examples of these problems include exploring cost/demand relationships in business and applying those ideas to profit, revenue, optimization, and other interrelationships particular to business. As for economics, example problems include examination of the index of wealth distribution and it's ramifications. Social science applications include exploring factors involved in student learning rates.

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Assessment <i>Must Include Assignment & Rubric</i>	This will be assessed using the Critical Thinking Skills rubric.
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Skill Objective:	Communication Skills: to include effective written, oral, and visual communication
THECB Course Objective	SLO #1 Apply calculus to solve business, economics, and social sciences problems.
Course Student Learning Outcome	SLO #1 Apply calculus to solve business, economics, and social sciences problems.
General Learning Activities	Students will discuss, report on, and diagram implications revealed when calculus concepts are applied to problems related to business, economics, and social sciences in order to better understand, interpret, and extrapolate data particular to those fields. Examples of these problems include exploring cost/demand relationships in business and applying those ideas to profit, revenue, optimization, and other interrelationships particular to business. As for economics, example problems include examination of the index of wealth distribution and its ramifications. Social science applications include exploring factors involved in student learning rates.
Assessment <i>Must Include Assignment & Rubric</i>	The Communication Skills rubric will be used to assess communication skills.

Skill Objective:	Empirical and Quantitative Skills: to include applications of scientific and mathematical concepts.
THECB Course Objective	SLO #7 Solve business, economics, and social sciences applications problems using integration techniques.
Course Student Learning Outcome	SLO #7 Solve business, economics, and social sciences applications problems using integration techniques.
General Learning Activities	Students will apply calculus concepts to problems related to business, economics, and social sciences in order to better understand, interpret, and extrapolate data particular to those fields. Examples of these problems include exploring cost/demand relationships in business and applying those ideas to profit, revenue,

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	optimization, and other interrelationships particular to business. As for economics, example problems include examination of the index of wealth distribution and it's ramifications. Social science applications include exploring factors involved in student learning rates.
Assessment <i>Must Include Assignment & Rubric</i>	The Empirical and Quantitative Skills rubric will be used to assess empirical and quantitative skills.