



## **Business Calculus - Math 1325**

### **Course Syllabus: Summer 2017**

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“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

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<b>Office Hours</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Online</b>
	ONLINE	ONLINE	ONLINE	ONLINE		email

*The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.*

**Catalog Course Description (include prerequisites):** Three credit hours. This course is a basic study of limits, continuity, derivatives, techniques and applications of derivatives, optimization and graphing, integrals, techniques and applications of integrals, and multivariate calculus. Applications in business, economics, and social sciences are emphasized. Prerequisite: College Algebra (MATH 1314) or Finite Math (MATH 1324)

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**Required Textbook(s):** Lial/Hungerford/Holcomb, Mathematics with Applications in the Management, Natural, and Social Sciences, 11th Ed., 2015

**Publisher:** Pearson, Boston, MA

**ISBN Number:** # 0-321-19991-X (Includes both textbook and MyMathLab access code)

Note: The NTCC Bookstore link is at [www.ntcc.edu](http://www.ntcc.edu).

**Recommended Reading(s):** None

#### **Student Learning Outcomes:**

Upon successful completion of this course, students will

**1325.1** Apply calculus to solve business, economics, and social sciences problems.

**1325.2** Utilize appropriate differentiation techniques to obtain the derivative of various functions including exponential and logarithmic functions.

**1325.3** Solve application problems involving implicit differentiation and related rates.

**1325.4** Solve optimization problems with emphasis on business and social sciences applications.

**1325.5** Determine and utilize appropriate techniques of integration including substitution and integration of parts.

**1325.6** Extend the pattern of various calculus techniques to functions of two variables to find solutions.

### **Core Curriculum Purpose and Objectives:**

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning.

Courses in the foundation area of mathematics focus on quantitative literacy in logic, patterns, and relationships. In addition, these courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

### **College Student Learning Outcomes:**

#### Critical Thinking Skills

**CT.1** Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

#### Communication Skills

**CS.1** Students will effectively develop, interpret and express ideas through written communication.

#### Empirical and Quantitative Skills

**EQS.1** Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form

**EQS.2** Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

**EQS.3** Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

**SCANS Skills:** N/A

#### **Course Outline:**

- 11.1 Limits
- 11.2 One-sided Limits and Limits Involving Infinity
- 11.3 Rates of Change
- 11.4 Tangent Lines and Derivatives
- 11.5 Techniques for Finding Derivatives

#### EXAM 1

- 11.6 Derivatives of Products and Quotients
- 11.7 The Chain Rule
- 11.8 Derivatives of Exponential and Logarithmic Functions
- 11.9 Continuity and Differentiability
- 12.1 Derivatives and Graphs

EXAM 2 (Students are expected to make arrangements to take Exam 2 in a proctored setting. The location must be approved by the instructor. The student is responsible for paying any fees needed for use of facility.)

- 12.2 The Second Derivative
  - 12.3 Optimization Applications
  - 12.4 Implicit Differentiation
  - 12.5 Related Rates
  - 13.1 Antiderivatives
  - 13.2 Integration by Substitution
  - 13.3 Area and the Definite Integral
- EXAM 3

- 13.4 The Fundamental Theorem of Calculus
- 13.5 Applications of Integrals
- 14.1 Functions of Several Variables
- 14.2 Partial Derivatives

COMPREHENSIVE FINAL EXAM (Students are expected to make arrangements to take the Final in a proctored setting. The location must be approved by the instructor. The student is responsible for paying any fees needed for use of facility.)

**Lectures & Discussions:**

Material for the course will be provided through MyMathLab. Videos and sample problems are available for selected problems. Additional links to resources will be provided on sections that prove to be more difficult and may require additional help. Websites such as [khanacademy.org](http://khanacademy.org) and [youtube.com](http://youtube.com) can be useful. Students are encouraged to ask questions using the “Ask my Instructor” link in MML or by sending an email to the instructor.

**Tests/Exams:**

Exam information is located below in the Evaluation/Grading Policy. Dates for the exams are located in your MyMathLab Calendar. Material covered in each exam is located below in the Assignments section.

**Assignments:**

All problems assigned to each section are located in the Homework tab in MyMathLab. Dates for each section are located in your MyMathLab Calendar. Exam 2 and the Final Exam must be taken in a proctored setting approved by the instructor.

**Evaluation/Grading Policy:**

Three major 100 point examinations, evenly spaced throughout the semester, will be given and each will be worth 20% of the final grade. The average of a series of special assignments, quizzes, and homework will be worth 20%. A comprehensive final examination will contribute 20% to the final grade.

3 Major Exams	60%
Homework Grade	20%
Comprehensive Final Exam	20%
TOTAL	100%

Students are expected to complete the exam during the indicated time frame. Make-up exams will not be given. Late work will incur a penalty of 10% per day for whatever reason for not meeting the deadline, unless otherwise indicated by the instructor.

"A"	90-100%
"B"	80-89%
"C"	70-79%
"D"	60-69%
"F"	Below 60%

### **Other Course Requirements**

A graphing calculator is highly recommended for this course, but not required. The TI-84 Silver Edition is used by the instructor.

### **Student Responsibilities/Expectations:**

Students are expected to create a MyMathLab account using the instructions provided by the instructor. Assignments will be posted on a weekly basis along with deadlines. All assignments must be completed and submitted by the deadlines provided. Students are expected to make arrangements to take the Midterm and Final in a proctored setting. The location must be approved by the instructor. The student is responsible for paying any fees needed for use of the facility.

### **NTCC Academic Honesty Statement:**

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

### **Academic Ethics**

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

### **ADA Statement:**

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

### **Family Educational Rights And Privacy Act (FERPA):**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education

institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

**Other Course Policies:**

The college's official means of communication is via your campus email address. I will use your campus email address, Blackboard, and MyMathLab to communicate with you outside of class.