Math 1325.783FE Business Calculus

Syllabus: Fall 2019 W @ 3:00PM Pitt Center 122

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

Instructor: Dr. Doug Richey

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	Online Appointment	8:30-9:20 3:00-4:20	11:00-12:20 2:00-2:50	11:00-12:20 3:00-4:20	Online Appointment	Everyday

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): Business Calculus (Business Calculus MAT213 Paradise Valley Community College). Available free online as a PDF at http://www.opentextbookstore.com/buscalc/. You are not required to buy a hardcopy of the textbook; however, research shows that students learn more and retain it longer from using a hardcopy textbook. You may purchase one via NTCC Bookstore or online at Lulu.com.

Publisher: Lulu.com
ISBN Number: 21775821

Note: The NTCC Bookstore link is: 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:

Chapter 1: Review

1.1 Functions
1.2 Operations of Functions
1.3 Linear Functions
1.4 Exponents
1.5 Quadratics
1.6 Polynomials and Rational Functions
1.7 Exponential Functions
1.8 Logarithmic Functions

Chapter 2: The Derivative

2.1 Instantaneous Rate of Change
2.2 Limits and Continuity
2.3 The Derivative
2.4 Rate in Real Life
2.5 Derivatives of Formulas
2.6 Second Derivative and Concavity
2.7 Optimization
2.8 Curve Sketching
2.9 Applied Optimization
2.10 Other Applications
2.11 Implicit Differentiation and Related Rates

Chapter 3: The Integral

3.1 The Definite Integral
3.2 The Fundamental Theorem and Antidifferentiation
3.3 Antiderivatives of Formulas
3.4 Substitution
3.5 Additional Integration Techniques
3.6 Area, Volume, and Average Value
3.7 Applications to Business
3.8 Differential Equations

Chapter 4: Funcitons of Two Variables

4.1 Functions of Two Variables
4.2 Calculus of Functions of Two Variables
4.3 Optimization

Lectures & Discussions:
This is a hybrid, flexible entry class where students are required to access graded activities on blackboard online delivery of instruction. A typical class will involve general participation by all members in a discussion regarding the mathematical principles and procedures being studied. Some

small as well as large group activities will be employed, and students are expected to develop as team members as well as individuals.

Tests/Exams:
Exam information is located below in the Evaluation/Grading Policy. Dates for the exams will be set in class. Material covered in each exam is located in the course outline above.

Assignments:
Submission of homework problems will be determined on a section-by-section basis. Assignments are subject to change.

Evaluation/Grading Policy:
Two major 100 point examinations, evenly spaced throughout the semester, will be given and each will be worth 25% of the final grade. A series of online blackboard engagement opportunities, special assignments, quizzes, and homework will be worth 25%. A comprehensive final examination will contribute 25% to the final grade.

2 Major Exams	50%
Homework Grade	25%
Comprehensive Final Exam	25%
TOTAL	100%

Students are expected to attend class on the day of the exam. Make-up exams will not be given unless the student has coordinated with the instructor at least two days prior to the exam. Late work for whatever reason will incur a penalty unless otherwise indicated by the instructor. Any approved makeup will be in conjuction with the final course examination.

Other Course Requirements
A graphing calculator is recommended for this course, but not required.

Student Responsibilities/Expectations:
Cell phone usage in the classroom will be coordinated by the professor. Students are expected to be respectful toward classmates and professor at all times. Students will be counseled when using a phone inappropriately. A student will be removed from class if any disruption continues.

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 request accommodations. For more information and to obtain a copy of the Request for Accommodations, please refer to the NTCC website - Special Populations.

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 whenhe 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 toobtain 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 and Blackboard to communicate with you outide of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages