Math 1325.021HY Business Calculus Hybrid

Course Syllabus: Spring 2021 R 8:00 – 9:20 BT-123

"Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed."

Instructor: Dr. Doug Richey

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	Online & Appointment	9:30 – 10:50	9:30 – 10:50	9:30 – 10:50	Online & Appointment	Everyday

This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.

Course Description: 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. Three hours credit.

Prerequisite(s): MATH 1314 or MATH 1324 with a grade of "C" or better

Student Learning Outcomes:

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

1325.2 Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential 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 appropriate technique(s) of integration.

1325.6 Integrate functions using the method of integration by parts or substitution, as appropriate.

1325.7 Solve business, economics, and social sciences application problems using integration techniques.

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.

Program 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.

Evaluation/Grading Policy: Two major 150 point examinations, evenly spaced throughout the semester, will be given and together will be worth 75% of the final grade. A series of online blackboard engagement opportunities, special assignments, quizzes, and homework will be worth 25%. A – 90%; B - 80%; C – 70%; D – 60%.

Required Instructional Materials: : 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: OpenStax Lulu.com - Product ID: 21775821 ISBN Number: 15128542

Optional Instructional Materials: None.

Minimum Technology Requirements: Scientific Calculator

Required Computer Literacy Skills: Access to computer with internet connection

Course Structure and Overview: 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 makeups will be in conjuction with the final course examination. Attendance and engagement are preferred.

Communications: Graded work will be returned in face to face classes the next class after it has been submitted. This is a hybrid class where students are required to access graded activities on blackboard online delivery of instruction. Phone messages and email will receive responses within 12 hours from receipt of message.

Institutional/Course Policy: 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.

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements
In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (http://www.ntcc.edu/) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

NTCC Academic Honesty/Ethics Statement:
NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

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. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

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.

Tentative Course Timeline (*note* instructor reserves the right to make adjustments to this timeline at any point in the term

Midterm Homework is problems (3, 6, 9, …) in Sections 1.1 – 2.7 due 8th week of semester. Midterm Examination will cover same sections as midterm homework.

Final Homework is problems (3, 6, 9, …) in Sections 2.8 – 4.3 due last week of semester. Final Examination will cover same sections as final homework.

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

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