Math 1324.021HY Finite Mathematics

Course Syllabus: Fall 2020 R @ 8:00am UHS-158

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

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	Online and Appointment	9:30-12:20	12:00-1:20	4:00-5:00	Online and 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.

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.

Video Recording of Course Activities

Certain portions of this course may be recorded via video conferencing software to assist students in course material review or later viewing by a student who was not able to attend the live session. The recordings will be made available only to students within the course and will cease to be available upon completion of the course. Students may not retain, reproduce, or share recordings.

Course Description: Finite Mathematics addresses topics of the application of common algebraic functions, including polynomial, exponential, logarithmic, and rational to problems in business, economics, and the social sciences. The applications include mathematics of finance, including simple and compound interest and annuities, systems of linear equations, matrices, linear programming, probability including expected value, and statistics including measures of central tendency, measures of variation, and normal

distribution. Three hours credit.

Prerequisite(s): 1) TSI Not Complete – Multiple Measures Placement with Corequisite Model
or 2) TSI Complete Status

Required Textbook(s): Business Precalculus Copyright 2016 by David Lippman This text is licensed under a Creative Commons Attribution – Share Alike 3.0 United States License. To view a copy of this license, visit http://creativecommons.org/licenses/by-sa/3.0/us/ or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, USA/

Good news: your textbook for this class is available for free online, in web view and PDF format! You can also purchase a print version, if you prefer, via the campus bookstore or from lulu.com. Research shows you learn more and retain it longer using a hard copy textbook.

Publisher: Lulu.com

ISBN Number: 22667462

Note: The NTCC Bookstore link is at www.ntcc.edu.

Recommended Reading(s):
None

Student Learning Outcomes:

1324.1 Apply elementary functions including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.

1324.2 Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.

1324.3 Apply basic matrix operations, including linear programming methods, to solve application problems.

1324.4 Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.

1324.5 Apply matrix skills and probability analyses to model applications to solve real-world problems.
1324.6 Apply statistical analyses including measures of center, measures of variation, and the normal distribution to model applications to solve real-world problems.

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.

Course Overview In Topical Coverage:

I. Equations, Functions, and Graphs
   A. Equations of Lines
   B. Linear Inequalities
   C. Functions and Graphs
   D. Applications of Linear Functions

II. More Functions; The Mathematics of Finance
   A. Quadratic Functions with Applications
   B. Exponential Functions with Applications
   C. Logarithmic Functions
   D. Simple Interest and Discount
   E. Compound Interest

III. Systems of Linear Equations
   A. Systems of Linear Equations with Applications
   B. Matrix Operations with Applications
   C. Graphing Linear Inequalities in Two Variables
   D. Linear Programming: The Graphical Method with Applications
   E. The Simplex Method: Maximization

IV. Probability Analyses

A. Sets, Venn Diagrams, Experiments, Sample Spaces
B. Basic Concepts: Rules for Addition, Complements, Odds
C. Conditional Probability, Independence
D. Probability Distributions and Expected Value
E. Multiplication Principle, Permutations, and Combinations

V. Statistics
A. Binomial Distribution
B. Measures of Central Tendency
C. Measures of Variation
D. Normal Distribution
E. Normal Approximation to the Binomial Distribution

Course Outline From Textbook: Practice Exercises Are On Blackboard

Chapter 1: Functions and Lines
Section 1.1 Functions and Function Notation
1.2 Domain and Range
1.3 Rates of Change and Behavior of Graphs
1.4 Linear Function
1.5 Graphs of Linear Functions
1.6 Modeling with Linear Functions
1.7 Fitting Linear Models to Data

Chapter 2: Systems of Equations and Matrices
Section 2.1 Systems of Equations
2.2 Solving Systems using Matrices
2.3 Matrix Operations
2.4 Solving Systems and Inverses

Chapter 3: Linear Programming
Section 3.1 Inequalities in One Variable
3.2 Linear Inequalities
3.3 Graphical Solutions
3.4 Simplex Method
3.5 Applications of Linear Programming

Chapter 4: Polynomial and Rational Functions
Section 4.1 Quadratic Functions
4.2 Polynomial Functions
4.3 Rational Functions

Chapter 5: Exponential and Logarithmic Function
Section 5.1 Exponential Functions
5.2 Logarithmic Functions
5.3 Exponential and Logarithmic Models

Midterm Examination and Homework Due October 15, 2020

Chapter 6: Finance
Section 6.1 Simple and Compound Interest
6.2 Annuities

6.3 Payout Annuities
6.4 Loans
6.5 Multi-stage Finance Problems

Chapter 7: Sets

Section 7.1 Sets
7.2 Venn Diagrams and Cardinality

Chapter 8: Probability

Section 8.1 Concepts of Probability
8.2 Conditional Probability and Bayes Theorem
8.3 Counting
8.4 Expected Value

Chapter 9: Statistics (Taken from OpenStaxs Introductory Statistics)

Section 9.1 Binomial Distribution
9.2 Measures of Central Tendency
9.3 Measures of Variation
9.4 Normal Distribution
9.5 Normal Approximation to the Binomial Distribution

Final Examination and Homework Due December 10. 2020

Lectures & Discussion: This is a hybrid 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.

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

Evaluation/Grading Policy: Two major 150 point examinations will be given and each will be worth 37.5% of the final grade. The average of a series of special assignments, and homework will be worth 25%. A comprehensive final examination will contribute 25% to the final grade.

2 Major Exams	75%
Online Engagement and Special Assignments	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.

Grading System

"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. Note: The NTCC Bookstore link is at www.ntcc.edu

Student Responsibilities/Expectations: Cell phone usage in the classroom will be coordinated by the professor to allow for only meaningful academic use. An appropriate mask or face covering will be worn at all times in the classroom. Students violating this policy will be immediately sent to Student Services for relocation into another class more suited to their needs.

The college's official means of communication is via your campus email address. I will use your campus email address, but mainly Blackboard course messages to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages. Check your Blackboard course messages daily.

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 thestudent. 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.

NTCC Campus Carry Policy:
Please review the Campus Carry Policy at the provided link.