



Math 1314.783 HY College Algebra Hybrid

Course Syllabus: Sum 2 2023 TR @1:30 – 3:40 Pitt Center

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

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| Office | Monday | Tuesday | Wednesday | Thursday | Friday | Online |
|--------|--------------------|-------------|--------------------|-------------|--------------------|----------|
| Hours | Online Appointment | 8:00 - 9:00 | Online Appointment | 8:00 – 9:00 | 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.

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: This course covers the development of the complex number system, solutions of quadratic equations and systems involving quadratics, relations, functions, inverses, ratio, proportion, and variation, theory of equations, progressions, matrices, exponential and logarithmic functions, permutations, combinations, and probability as time permits.

Prerequisite: Appropriate TSI score / TSI placement with multiple measures

Co-requisite: MATH 1314 College Algebra with TSI Placement.

Student Learning Outcomes:

Upon successful completion of this course, students will:

- 0114.1 Use appropriate symbolic notation and vocabulary to communicate, interpret, and explain mathematical concepts.
- 0114.2 Define, represent, and perform operations on real numbers, applying numeric reasoning to investigate and describe quantitative relationships and solve real world problems in a variety of contexts.
- 0114.3 Use algebraic reasoning to solve problems that require ratios, rates, percentages, and proportions in a variety of contexts using multiple representations.
- 0114.4 Apply algebraic reasoning to manipulate expressions and equations to solve real world problems.
- 0114.5 Use graphs, tables, and technology to analyze, interpret, and compare data sets.
- 0114.6 Construct and use mathematical models in verbal, algebraic, graphical, and tabular form to solve problems from a variety of contexts and to make predictions and decisions.

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.

Evaluation/Grading Policy: Two major 150 point examinations, evenly spaced throughout the semester, will be given and each will be worth 37.5% of the final grade. The average of a series of special online assignments, quizzes, and homework will be worth 25%.

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|---------------------|------|
| 2 Major Exams | 75% |
| Special Assignments | 25% |
| TOTAL | 100% |

Required Instructional Materials: College Algebra

Publisher: Openstax

ISBN Number: 978-1-938168-38-3

Optional Instructional Materials: None

Research indicates that students learn more and retain it longer from hard copy text.

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

Minimum Technology Requirements: Scientific Calculator

Required Computer Literacy Skills: Ability to read and comprehend at a college level. Independently motivated and responsible. Capable of self-instruction. Has access to a computer, printer and internet connection.

Course Structure and Overview: Come to class regularly. Take notes. Ask questions. This is a hybrid class where students are required to access graded activities on Blackboard online delivery of instruction.

Communications: Phone messages and email will be responded to within six hours of receipt. All graded work will be returned the next class meeting after it is submitted.

Institutional/Course Policy: Cell phone usage in the classroom will be coordinated by the professor. Students are expected to be respectful to classmates, professor and themselves. Students will be warned when using a phone inappropriately. A student will be removed from class if any disruption continues. 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/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.

Course Outline:

- I. Equations and Inequalities
 - A. Linear Equations and Rational Equations
 - B. Quadratic Equations
 - C. Models and Applications

- II. Functions and Graphs
 - A. Linear Functions and Slope
 - B. Transformations of Functions
 - C. Combinations of Functions
 - D. Inverse Functions
 - E. Distance and Midpoint Formulas; Circles

- III. Polynomial and Rational Functions
 - A. Quadratic Functions
 - B. Polynomial Functions and Their Graphs
 - C. Zeros of Polynomial Functions
 - D. Modeling Using Variation

- IV. Exponential and Logarithmic Functions
 - A. Exponential Functions
 - B. Logarithmic Functions

- C. Properties of Logarithms
- D. Exponential and Logarithmic Equations
- E. Exponential Growth and Decay

- V. Systems of Equations and Inequalities
 - A. Systems of Linear Equations in Two Variables
 - B. Systems of Linear Equations in Three Variables

- VI. Matrices and Determinants

- VII. Counting and Probability

Tentative Course Timeline With Sections and Problems Assigned: (*note* instructor reserves the right to make adjustments to this) timeline at any point in the term.

Midterm Homework and Examination Due July 27th, 2023

Sections: [1.1 – 1.6; 2.1 – 2.6; 3.1 – 3.2] Problems: {5, 10, 15, 20, 25, 30, 35, 40}

Final Homework and Examination Due August 10th, 2023

Sections: [4.1 – 4.3; 5.1 – 5.2; 6.1 – 6.4; 7.1, 7.5, 7.6; 9.5, 9.7] Problems: {7, 14, 21, 28, 35}