



## College Algebra HY - Math 1314.782TR

### Course Syllabus: Summer 2-2019–1:30PM-Pitt Center

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

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	Online Appointment	12:00-1:00	Online Appointment	12:00-1:00	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):** 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: MATH 0305 or its equivalent or an appropriate placement score.

**Required Textbook(s):** College Algebra

**Publisher:** openstax

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

**Research indicates students learn more and retain it longer using hard copy texts.**

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

1314.1 Demonstrate understanding and knowledge of properties of functions, which include domain and range, operations, compositions, and inverses.

1314.2 Recognize and apply polynomial, rational, radical, exponential, and logarithmic functions and solve related equations.

1314.3 Apply graphing techniques of transformations and combinations to common algebraic

functions.

1314.4 Use linear mathematical models to problem-solve.

1314.5 Evaluate all roots of higher degree polynomial functions.

1314.6 Recognize, solve and apply systems of linear equations using matrices.

### **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:**

- 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

**Lectures & Discussions:**

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. This is a hybrid class where students are required to access graded activities on blackboard online delivery of instruction.

### **Grading Policy**

Two major 150 point examinations, a midterm and final, will be given and will be worth 75% of the final grade. A series of special online assignments, quizzes, and homework valued at 100 points will be worth 25% of the final grade.

2 Major Exams	75%	A – 90%
Special Assignments	25%	B – 80%
TOTAL	100%	C – 70%
		D – 60%
		F – Below 60%

### **Assignments:**

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

### **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](http://www.ntcc.edu)

### **Responsibilities/Expectations:**

"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."

### **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 website – Special Populations or Katherine Belew at 903-434-8104.

**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:**

Cell phone usage in the classroom will be for constructive tasks guided by the professor. Please be respectful to your classmates and professor.

The college's official means of communication is via your campus email address. I will use your campus email address 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.