



# Math 1314.001 College Algebra

Course Syllabus: Spring 2019 (Subject to Change)

Class Meeting: Tuesday/Thursday 9:30 AM-10:50 AM

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

**Dr. Jackie Johnston**

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	9:30 – 11:00 (MS-120)	11:00 – 1:00 (MS-120) 2:00 – 3:00 (MS-120)	9:30 – 11:00 (MS-120) 2:30 – 3:00 (Pittsburg Center)	9:00 – 9:30 (MS-120) 11:00 – 11:30 (MS-120)	By Appointment.	Email-anytime Zoom meeting by appointment.

*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):**

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 OpenStax on Amazon.com. The free PDF format is available in your Blackboard course.

You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)



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**ISBN Number:**

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Digital: ISBN-10: 1-947172-12-3 or ISBN-13: 978-1-947172-12-8

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. Probability (if time permits)

**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.

In class, students will participate via group and individual discussions as well as Kahoot quizzes. Additional instruction will be given during the in-class portion of the course as needed.

**Grading Policy**

Two major examinations, evenly spaced throughout the semester, will be given and each will be worth 25% of the final grade. The average of a series in-class assignments (group work, discussions, Kahoot quizzes, etc.), and homework will be worth 25% of the final grade. A comprehensive final examination will contribute 25% to the final grade. **Late work will not be accepted unless prior approval from the instructor.** There is no penalty for late work, if accepted by the instructor.

2 Major Exams	50%
Homework/Special Assignments	25%
Comprehensive Final Exam	25%
TOTAL	100%

- A → 90% to 100%
- B → 80% to 89%
- C → 70% to 79%
- D → 60% to 69%
- F → 59% or less

**Assignments & Exams:**

Submission of homework problems will be determined on a section-by-section basis. Homework will be completed and submitted online. These assignments are graded automatically when submitted. Special assignments will consist of in class discussions as well as in class groupwork and Kahoot quizzes. Kahoot quizzes are graded upon completion. In class discussions or

groupwork will be graded within 72 hours after due date. Exams will be in class and grades will be posted within 72 hours after due date.

**Other Course Requirements:**

A graphing calculator is required for this course. A TI-83/84 is recommended. Please contact instructor if you have any questions regarding the calculator requirement BEFORE purchasing. Note: The NTCC Bookstore link is at [www.ntcc.edu](http://www.ntcc.edu).

**Responsibilities/Expectations:**

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 or any distracting behavior. A student will be removed from class if any disruption continues and must meet with the instructor and Vice President of Student Services before returning to class.

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 outside of class. Make sure you keep your campus email cleaned out and below the limit, so you can receive important messages.

**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. An appointment can be made with Shannin Garrett, Academic Advisor/Coordinator of Special Populations located in the College Connection. She can be reached at 903-434-8218. 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 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:**

Late work will not be accepted unless prior approval from the instructor. This approval is made on an individual basis by the instructor. No make-up exams will be given. Any missed exams will be made up with the comprehensive exam. Students are expected to be respectful toward classmates and professor at all times!