



# INSTRUCTIONAL PACKAGE

MAT 110

College Algebra

Effective Term  
2018—2019 Academic Year

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## PART I: COURSE INFORMATION

Effective Term: 2018—2019 Academic Year

COURSE PREFIX: MAT 110

COURSE TITLE: College Algebra

CONTACT HOURS: 3.0

CREDIT HOURS: 3.0

### RATIONALE FOR THE COURSE:

College Algebra is designed for students who intend to transfer to a four-year institution or who intend to take calculus, MAT 130 or MAT 140. All skills are learned with a focus on problem solving, so that the logical thought processes become a useful tool in their other classes.

### COURSE DESCRIPTION:

This course includes the following topics: polynomial, rational, logarithmic, and exponential functions; inequalities; systems of equations and inequalities; matrices; determinants; and solutions of higher degree polynomials. This course is transferable to public senior institutions as part of the South Carolina Commission on Higher Education Statewide Articulation Agreement.

### PREREQUISITES/CO-REQUISITES:

(Credit level [MAT 102](#) Minimum Grade of C or Credit level [MAT 102](#) Minimum Grade of TC or COMPASS Algebra 62 or SAT Mathematics 530 or ACT Math 22 or COMPANION Elementary Algebra 100 or ACCUPLACER Elementary Algebra 100) or ( Multiple Measures Math 1)

**\*Online/Hybrid** courses require students to complete the DLI Online Student Orientation prior to completing an online course. The DLI Online Student Orientation can be found in WaveNet, under the My Student tab.

### REQUIRED MATERIALS:

1. Please visit the Bookstore online site for most current textbook information. Use the direct link below to find textbooks.  
[BOOKSTORE](#).

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

2. Scientific/Graphing Calculator

### ENTRY LEVEL COMPETENCIES (These topics are Chapter P of the textbook):

P.1 Evaluate algebraic expressions. Use inequality symbols. Evaluate absolute value.

Identify properties of real numbers. Simplify algebraic expressions.

P.2 Simplify exponential expressions using the rules (product rule, quotient rule, zero exponent rule and power rule). Use scientific notation.

P.3 Evaluate square roots, simplify radicals, rationalize denominators, evaluate and perform operations with higher roots. Understand and use rational exponents.

- P.4 Understand the vocabulary of polynomials. Add, subtract, and multiply polynomials.
- P.5 Factor out the greatest common factor of a polynomial. Factor by grouping. Factor trinomials. Factor the difference of two squares. Factor the sum and difference of two cubes. Use general strategy for factoring polynomials.
- P.6 Specify numbers that must be excluded from the domain of a rational expression. Simplify rational expressions. Multiply rational expressions. Divide rational expressions. Add or subtract rational expressions, Simplify complex rational expressions.

Additionally, the following topics are considered Entry Level Competencies.

1. Solving equations and inequalities of one variable that arise in practical applications of math.
2. Using the idea of a function to express relationships among observable quantities with efficiency and precision.
3. Solving given simple systems of linear equations and inequalities.

#### **TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's student portal for course materials.  
WaveNet and D2L email access.

#### **STUDENT IDENTIFICATION VERIFICATION**

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

#### **CLASSROOM ETIQUETTE:**

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

**NETIQUETTE:** is the term commonly used to refer to conventions adopted by Internet users on the web, mailing lists, public forums, and in live chat focused on online communications etiquette. For more information regarding Netiquette expectations for distance learning courses, please visit: [Online Netiquette](#).

## **Part II: Student Learning Outcomes**

#### **COURSE LEARNING OUTCOMES and ASSESSMENTS\*:**

The student should be able to:

1. Understand the Real Number System and the Complex Number System.
2. Formulate a simple function to express a relationship between two variables.
3. Solve linear equations and linear inequalities.
4. Use intermediate problem solving techniques to solve word problems.
5. Solve absolute value equations and inequalities.
6. Understand and use the definition and properties of functions.

7. Graph functions and identify their domain, range, vertex and intercepts.
8. Understand combination and composition of functions.
9. Understand inverse functions.
10. Solve quadratic equations by several methods.
11. Investigate the zeros of general polynomial functions.
12. Investigate the zeros and asymptotes of rational functions.
13. Graph polynomial and rational functions.
14. Recognize and understand exponential and logarithmic functions and properties in any base.
15. Solve exponential and logarithmic equations.

## **CHAPTER 1 Equations and Inequalities**

- 1.1 Graphs and Graphing Utilities
- 1.2 Linear Equations and Rational Equations
- 1.3 Models and Applications
- 1.4 Complex Numbers
- 1.5 Quadratic Equations
- 1.6 Other Types of Equations
- 1.7 Linear Inequalities and Absolute Value Inequalities

## **CHAPTER 2 Functions and Graphs**

- 2.1 Basics of Functions and Their Graphs
- 2.2 More on Functions and Their Graphs
- 2.3 Linear Functions and Slope
- 2.4 More on Slope
- 2.5 Transformations of Functions
- 2.6 Combinations of Functions; Composite Functions
- 2.7 Inverse Functions
- 2.8 Distance and Midpoint Formulas; Circles

## **CHAPTER 3 Polynomial and Rational Functions**

- 3.1 Quadratic Functions
- 3.2 Polynomial Functions and Their Graphs
- 3.3 Dividing Polynomials: Remainder and Factor Theorems
- 3.4 Zeros of Polynomial Functions
- 3.5 Rational Functions and Their Graphs
- 3.6 Polynomial and Rational Inequalities

### 3.7 \*\*Modeling Using Variation

## CHAPTER 4 Exponential and Logarithmic Functions

- 4.1 Exponential Functions
- 4.2 Logarithmic Functions
- 4.3 Properties of Logarithms
- 4.4 Exponential and Logarithmic Equations
- 4.5 \*\*Exponential Growth and Decay; Modeling Data

\*\*As time permits.

***\*Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

## Part III: Grading and Assessment

### EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS\*

***\*Students, for the specific number and type of evaluations, please refer to the Instructor’s Course Information Sheet.***

#### GRADING SYSTEM:

- A 90-100%
- B 80-89%
- C 70-79%
- D 60-69%
- F Below 60%

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the academic calendar for deadlines for add/drop ([ACADEMIC CALENDAR](#)). You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

## Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of eighty percent (80%) of his or her classes in order to be eligible to receive credit for any course. However, due to the varied nature of courses taught at the College, a more rigid attendance policy may be required by individual instructors. At a minimum, a student may be withdrawn from a course(s) after he or she has been absent in excess of ten percent (10%) of the total contact hours for a course. Additionally, students will be withdrawn if they miss more than two weeks of consecutive class meetings.

Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.

For online and hybrid courses, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

## Part V: Student Resources



### The Student Success and Tutoring Center (SSTC)

The SSTC offers to all students the following **free** resources:

1. **Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
2. **On-line student success and academic support resources**.

Visit the SSTC website: [Student Success & Tutoring Center](#) and visit the student services tab in your WaveNet account to schedule appointments using TutorTrac. For more information, call: SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455. Room locations and Live Chat is available on the SSTC website.



### Student Information Center: WaveNet Central (WNC)

WNC offers to all students the following **free** resources:

1. **Getting around HGTC:** General information and guidance for enrollment!
2. Use the [Online Resource Center \(ORC\)](#) for COMPASS support, technology education, and online tools.
3. **Drop-in technology support or scheduled training** in the Center or in class.
4. **In-person workshops, online tutorials and more services** are available.

Visit the WNC website: [Wavenet Central](#). Live Chat and Center locations are posted on the website. Or please call one of the following locations: WNC Conway, 349-5182; WNC Grand Strand, 477-2076; and WNC Georgetown, 520-1473.

### Student Testing:

Testing in an **online/hybrid** course may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms

Furthermore, tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through RPNOW, our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

## Disability Services

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to Jocelyn Williams, Director of Student Development on the Conway Campus Jaime Davis, Counselor/Advisor on the Georgetown Campus or Kristin Griffin, Counselor on the Grand Strand Campus. These individuals will review documentation of the student's disability and, in a confidential setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

## Statement of Equal Opportunity/Non-Discrimination Statement

Horry Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, gender, national or ethnic origin, age, religion, disability, marital status, veteran status, sexual orientation, gender identity, or pregnancy in educational programs and/or activities.

## Title IX Requirements

Horry Georgetown Technical College prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking. Any student who believe he or she has experienced or witnessed discrimination including sexual harassment, domestic violence, dating violence, sexual assault or stalking is encouraged to report such incidents to one of the College's Title IX Coordinators.

\*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

<b>Inquiries regarding the non-discrimination policies:</b>	
Student and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Associate Vice President for Student Affairs.	Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Associate Vice President for Human Resources.
<b>Dr. Melissa Batten, AVP Student Affairs</b> <i>Title IX Coordinator</i> Building 1100, Room 107A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5228 <a href="mailto:Melissa.Batten@hgtc.edu">Melissa.Batten@hgtc.edu</a>	<b>Jacquelyne Snyder, AVP Human Resources</b> <i>Section 504, Title II, and Title IX Coordinator</i> Building 200, Room 212A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5212 <a href="mailto:Jacquelyne.Snyder@hgtc.edu">Jacquelyne.Snyder@hgtc.edu</a>