



**CHATTAHOOCHEE TECHNICAL COLLEGE**  
Mountain View Campus

School of Related Arts & Sciences  
General Studies Program  
Course Info

**MAT 191 – College Algebra**

Summer 2008

CRN # 10020

**I. GENERAL INFORMATION**

**Instructor Info**

<b>Name:</b>	B. Thompson	<b>Office Hours:</b>	
<b>Office:</b>	207	<b>Monday &amp; Wednesday:</b>	<b>Tuesday &amp; Thursday:</b>
<b>Phone:</b>	770-509-6328	12:10 – 12:50 PM	9:00 – 10:05 am
<b>Email:</b>	<a href="mailto:bthompson@chattcollege.com">bthompson@chattcollege.com</a>	3:05 – 3:30 PM	3:05 – 3:35 PM
			5:00 – 5:50 PM
			8:05 – 8:30 PM

**Class Info**

<b>MyMathLab Course ID:</b>	thompson48238
<b>Meeting Times:</b>	Monday & Wednesday, 1:00 – 3:05 PM
<b>Last day of class:</b>	Monday, September 08
<b>Final Exam date:</b>	Wednesday, September 10

**Important dates**

<b>Drop/Add:</b>	July 01 – 03
<b>Last Day to Withdraw and receive a “W”:</b>	August 06
<b>Last Day to Withdraw and receive a “WP” or a “WF”:</b>	August 27
<b>Holiday:</b>	Monday, September 01

## II. MATERIALS - REQUIRED

### A. MyMathLab Access Code

The MyMathLab Student Access Kit is required.

**It comes packaged with the new textbooks sold on the Mountain View Campus. If purchasing the textbook at another location, please check to ensure that the MyMathLab Student Access Kit is also included.**

The MyMathLab Student Access Kit can be purchased separately either at the Marietta or Mountain View campus bookstores; as an option, the MyMathLab Student Access Kit can also be purchased online. More details on that will be provided on the first day of class.

### B. Textbook

A textbook is required.

**Students should choose to use either of the following.**

#### 1. An online PDF version

The PDF version of the textbook is available online, at no additional cost, when using your MyMathLab account.

#### 2. Or a traditional printed textbook

Students wishing a traditional printed textbook should choose **one** of the following textbooks. Both contain all of the material needed for this course. The second textbook contains the additional chapters needed for the MAT 194 course at the Mountain View campus.

- **For this course only:**  
A Graphical Approach to College Algebra plus MyMathLab Student Access Kit Package, 4<sup>th</sup> Edition, by Hornsby, Lial, Rockswold, ISBN 0321370031
- **For both this course and also MAT 194 (on the Mountain View Campus):**  
A Graphical Approach to Precalculus plus MyMathLab Student Access Kit Package, 4<sup>th</sup> Edition, by Hornsby, Lial, Rockswold, ISBN 0321370082

### C. Graphing Calculator

A **graphing calculator** is required for this course.

Students may elect to use either the **TI-83** or the **TI-84** model. Students choosing to use other types of calculators are responsible for learning how to use them and for determining whether or not their calculator contains all the features needed for this course.

## III. MATERIALS – STRONGLY RECOMMENDED

- Graph paper, ruler, a notebook or writing paper, and different colors of pens/pencils are needed for the class.
- A binder for handouts and notes.

## IV. COURSE DESCRIPTION

This covers standard topics in college algebra. Topics include: a review of intermediate algebra, the function concept, elementary functions, algebra of polynomials, conic sections, and systems of equations. Applications involving linear and quadratic equations are included.

**CREDIT:** 5 Hours

**PREREQUISITES:** Program admission-level math achievement or MAT 099/152.

## V. COURSE OBJECTIVES AND GOALS

**As a result of MAT 191, the student will be able to do the following:**

- A. Demonstrate the concept of sets and set notation; and perform the set operations of complements, unions, and intersections.
- B. Solve: linear and inequalities; systems of linear equations with two unknowns; quadratic equations and inequalities; rational equations and inequalities; exponential equations; and logarithmic equations.
- C. Solve application problems involving: linear equations; linear systems; quadratic equations; exponential equations; and logarithmic equations.
- D. Identify all factors of algebraic expressions.
- E. Compute the value of expressions using the laws of exponents.
- F. Simplify radicals and use them in arithmetic operations.
- G. Graph: ordered pairs; linear equations and functions; quadratic equations and functions; exponential functions; logarithmic functions; and conics (parabolas, ellipses, hyperbolas, and circles).
- H. Define and recognize relations and functions.
- I. Define complex numbers.
- J. Perform arithmetic operations on polynomials, rational expressions, and complex numbers.

## VI. EXPECTED STUDENT OUTCOMES

**Upon successful completion of this course students should be competent in the following areas:**

- A. Fundamental Concepts of Algebra
- B. Equations and Inequalities
- C. Functions and Graphs
- D. Systems of Equations

## VII. TIME SPENT ON THIS COURSE

Time estimated for completing this course consists of many components, some of which are: time spent both in and out of class, student's comfort level with knowledge from previous mathematics courses, and other factors such as effort, attitude, and ability to learn this type of material. **Students should plan to spend a minimum of ten (10) hours outside of class, per week working on this course and more hours, if need be.**

## **VIII. FOOD AND DRINK IN THE CLASSROOM**

The following is a CTC policy.

- Food is not permitted in the classroom. Students who need to bring food into the classroom need to get authorization from the Student Services office.
- Drinks are permitted providing they are in sealable, twist top, non-spill containers. They must be kept away from the equipment and/or computers.
- Each class is responsible for keeping their room clean of bottles left behind; failure to adhere to this will result in the loss of the privilege of bringing drinks into this classroom.

## **IX. STOPPED ATTENDING**

Faculty are required to submit a list of students who have stopped attending. The definition of “stopped attending” for this class is a student who has missed two consecutive weeks.

It is the student’s responsibility to contact the instructor if he/she is to be absent from class or has missed class. It is the instructor’s decision as to whether to allow the student to return to class or to submit the student as “stopped attending” if the student misses the above defined number of classes.

Students submitted as “Stopped attending” are not eligible to be reinstated in the course; they will receive a grade of F for this course, unless the student withdraws from the course using the appropriate withdrawal procedure.

## **X. WORK ETHICS:**

The mission of Georgia’s Technical colleges is to provide the necessary skills for students to be successful employees in their chosen career. To be successful employees must possess both strong occupational skills and good work habits. CTC is committed to incorporating these good work habits into every facet of education. The ethics grade will be a separate grade attached to the academic grade.

Weekly Topics:

1. Attendance
2. Character
3. Teamwork
4. Appearance
5. Attitude
6. Productivity
7. Organizational Skills
8. Communication
9. Cooperation
10. Respect

## XI. BEHAVIOR:

One mission of CTC is to provide technical and adult education programs for the people of Georgia. To fulfill this mission, CTC must provide opportunities for intellectual, emotional, social, and physical growth. CTC students assume an obligation to act in a manner compatible with the fulfillment of the mission.

Disruptive behavior of any kind and offensive statements regarding one's race, sex, creed, national origin, physical disability, or mental disability are not appropriate and will not be tolerated. These statements may be considered a violation of the standards of conduct as stated in the current catalog.

Talking in class, arriving late, leaving early, taking frequent or extended breaks are examples of disruptive behavior that impact the concentration of other students in the classroom. These actions may also be considered a violation of the standards of conduct as stated in the current catalog.

## XII. ACADEMIC DISHONESTY:

Any student found to have committed the following misconduct is subject to disciplinary sanctions.

Acts of dishonesty, including but not limited to the following:

- Cheating, plagiarism, or other forms of academic dishonesty.
- Furnishing false information to any Technical College office, faculty member or office.

## XIII. COURSE POLICIES

### A. CLASSROOM

1. **Cell phones:**
  - Cell phones are to be placed in "Silent" mode before class begins.
  - Answering of telephones and/or checking mail is not permitted in the classroom. Failure to do so may result in confiscation of the device for the remainder of the class.
  - Students who need to answer emergency calls need to leave the room to do so. Anyone expecting an emergency call should sit near the door in order to cause a minimum of disruption to their classmates.
  - See Code of Conduct for additional information.
2. **Cell phones and Palm Pilots may not be used as calculators.**
3. **Laptops and Headsets may not be used during class time.** The only exception is that laptops may be used for MyMathLab **class work** only. Failure to follow this policy will result in loss of in class laptop privilege.
4. **Students may not leave the room during a quiz, test, or final exam. Nor may they check their cell phones during those times.** Students, who feel they may need to leave the room, should discuss it with the instructor ahead of time, in order to receive permission to take the evaluation in sections during that class period.

### B. ATTENDANCE

1. **Attendance** will be taken everyday both at the beginning and at the end of class. **Roll may be checked by use of a sign-in sheet.**
2. Students are expected to attend every class session in its entirety. It is understood that unusual circumstances may arise which warrant special consideration. It is the student's responsibility to discuss such cases with the instructor.
3. If a student misses roll, he or she must see the instructor by the end of that class to remove the absence.
4. Each tardy will count as 1/3 of an absence. Similarly, leaving early also counts as 1/3 of an absence.

5. Any form of nonparticipation, such as sleeping, reading other material, etc., counts as an absence.
6. Habitually leaving the classroom and/or leaving the classroom for extended periods of time are noted as an absence.
7. Students are responsible for any missed work and assignments. Student may go to the learning center for help on material missed.

**C. GRADING POLICIES – WP (Withdraw Passing) Grade:**

To receive a grade of WP a student must have achieved a 60 or better on at least one of the tests.

**D. GRADING POLICIES – Final Grade:**

**The final grade will consist of five major components:**

1. **Homework**  
Homework is to be submitted using MyMathLab. Homework should be completed by the beginning of the next class. Check the MyMathLab schedule for deadlines.
2. **Quizzes**  
The lowest quiz grade will be dropped. Generally the quizzes will cover concepts from the last few classes. Quizzes may also contain questions from the reading material for the current class; there could also be questions from the syllabus. See schedule for dates and other details.
3. **Tests**  
The lowest test grade will be dropped. Tests will cover recently covered sections. See schedule for dates and other details.
4. **Comprehensive Final Examination**  
There will be a final comprehensive examination. See schedule for the date.
5. **Bonus Points Based on the Homework and Reviews**  
Bonus points are earned based on how much homework and/or Review Problems are **completed in MyMathLab**.

Four snapshots of your work will be taken as follows.

- First Bonus Point: homework completed as of ten minutes before class time of the first test; see schedule for date.
- Second Bonus Point: review problems completed as of ten minutes before class time of the second test; see schedule for date.
- Third Bonus Point: review problems completed as of ten minutes before class time of the third test; see schedule for date.
- Fourth Bonus Point: review problems completed as of ten minutes before final exam; see schedule for date.

These bonus points will be computed as follows: take four percent of the total of the above snapshots.

**Thus up to four bonus points will be added to the final grade.**

**All quizzes, tests, and final exam are timed.**

**Students arriving late will be allowed to start a quiz, test, or final exam providing no one has already left the classroom.**

In order to gain credit for a problem, students should show work even if the problem is a multiple choice or true/false question.

**Students may not share calculators, etc. during a quiz, test, or final exam.**

**NOTE:** To receive credit for MAT 191, a student must score at least 60 on each of the following course components:

- Average of the three Tests
- Comprehensive Final Examination

**Grading Breakdown is as follows:**

Homework Average (MyMathLab only):	5%
Quiz Average:	5%
Test Average:	60%
Comprehensive Final Examination:	30%

In addition, up to **four bonus points** will be added to the final grade. See information on using MyMathLab in the homework section for details.

#### **E. CTC GRADING SYSTEM**

The student must have an A, B, or C (a 70 average or above) to pass this class. The student will earn one of the following grades:

	<b>Grade</b>	<b>Standard</b>
A:	(90 – 100)	Excellent
B:	(80 – 89)	Good
C:	(70 – 79)	Satisfactory
D:	(60 – 69)	Poor
F:	(0 – 59)	Failing
W:		Withdrawal
WP:		Withdrawal Passing
WF:		Withdrawal Failing

#### **F. EXEMPTION:**

Students meeting the following criteria may be exempt from the final examination.

- Student achieves a 95 or better average of all 3 tests.
- Student behaves in a manner befitting the CTC Code of Conduct.
- Student has not accrued more than three absences.

#### **G. MAKE-UP:**

**No make-ups of quizzes or tests will be given;** thus the missed quizzes and tests will count as zero. However, the **lowest quiz and also the lowest test grade will be dropped.** This applies to all students regardless of their attendance or reason.

Students, who miss the final examination due to an emergency, should contact their instructor within 24 hours of the exam to discuss the possibility of a make-up.

## H. MyMathLab

Make sure you use the correct course ID for this class. Failure to do so may result in your needing to purchase another access code.

The MyMathLab access code can be reused only with courses based on the exact same textbook. There may be a time limit with regards to this. Contact the support group at MyMathLab for details and/or questions.

If a problem occurs, see this instructor before attempting to use another Course ID or purchasing another access code.

Additional information can be found on the separate handout titled MyMathLab.

## XIV. AMERICANS WITH DISABILITIES (ADA):

An individual with a disability who may require assistance or accommodation in order to participate in or receive the benefit of a service, program or activity, or who desires more information may contact the Counselor for Disability Services at (770) 528-4529.

## XV. RESOURCES

**There are several resources available to you, among them are the following.**

- Your **instructor**, who encourages you to stop by to discuss your learning experiences in this class.
- **MyMathLab**, which can be used to improve understanding and performance. This online tool, which is based on the textbook, provides practice, with online help, and video lectures. Homework grades will be tracked through use of this tool.
- [www.interactmath.com](http://www.interactmath.com), which is another online help accompanying the textbook. Homework results cannot be tracked and thus will not count as towards the homework grade.
- **Classmates**, who form a great 3 person teaching system.
- Students are encouraged to use the **Learning Center, which is a FREE service**. Tutors are available for help. Videos and software, corresponding to the textbook, are available for student viewing. Other websites offering instruction in math are available for students. When a student is absent from class, he or she should go to the learning center for help on material missed. If a student is referred by an instructor, he or she is required to attend the Learning Center for instructional help.

## XVI. WARRANTY STATEMENT

Any graduate of Chattahoochee Technical College who is determined to be deficient in a competency identified in the state program standard shall be retrained upon the request of the employer at no cost to the employer or employee. This warranty is valid for two consecutive years following the date of graduation.

## XVII. COURSE CALENDAR

Like a foreign language, mathematics is a subject that requires practice and repetition as part of the synthesis of presented material. Preparation and regular class attendance facilitates this process.

<u>Date</u>	<u>Day</u>	<u>Topics</u>	<u>Sections</u>
Wednesday, July 02	1.	<b>Orientation</b> <ul style="list-style-type: none"> <li>▪ <b>Sets and Set Operations:</b> <ul style="list-style-type: none"> <li>▪ Demonstrate the concept of sets and set notation;</li> <li>▪ Set Builder and Interval Notation;</li> </ul> </li> <li>▪ <b>Rectangular Coordinate System</b></li> <li>▪ <b>Introduction To Relations and Functions:</b> <ul style="list-style-type: none"> <li>▪ Define relations and functions;</li> <li>▪ Vertical line test;</li> <li>▪ Define domain and range;</li> <li>▪ Function Notation</li> </ul> </li> <li>▪ <b>Linear Functions and Their Graphs:</b> <ul style="list-style-type: none"> <li>▪ Definition;</li> <li>▪ Slope;</li> <li>▪ X and Y-intercepts;</li> <li>▪ Slope-Intercept form of a line;</li> <li>▪ Comprehensive Graph;</li> <li>▪ Graphing;</li> <li>▪ Zero of a function</li> </ul> </li> </ul>	Syllabus 1.1, 1.2, 1.3
Monday, July 07	2.	<b>Solve linear equations.</b> <b>Solve linear inequalities.</b> <b>Solve application problems involving linear equations.</b>	1.5, 1.6
Wednesday, July 09	3.	<b>Quiz 1 (Day 01 – 02)</b>  <b>Analysis of Graphs of Functions</b> <ul style="list-style-type: none"> <li>▪ Continuity</li> <li>▪ Intervals: increasing, decreasing, constant</li> <li>▪ Symmetry with respect to: y-axis, origin, x-axis</li> <li>▪ Even and Odd Functions</li> </ul>	2.1
Monday, July 14	4.	Analysis of Graphs of Functions Continued <ul style="list-style-type: none"> <li>▪ Vertical and Horizontal Shifts of Graphs</li> <li>▪ Stretching, Shrinking, Reflecting</li> <li>▪ Transformations</li> </ul>	2.2, 2.3

<u>Date</u>	<u>Day</u>	<u>Topics</u>	<u>Sections</u>
Wednesday, July 16	5.	<b>Quiz 2 (Days 03 – 04)</b>  Quadratic Functions and Their Graphs <ul style="list-style-type: none"> <li>▪ Domain</li> <li>▪ Range</li> <li>▪ Zero</li> <li>▪ Vertex &amp; Extreme Values</li> <li>▪ Axis of Symmetry</li> <li>▪ Concavity and End Behavior</li> </ul>	3.2
Monday, July 21	6.	<b>Radicals</b> <ul style="list-style-type: none"> <li>▪ Simplifying square roots of any nonnegative number.</li> <li>▪ Simplifying square roots of negative numbers.</li> <li>▪ Simplifying radicals and using them in arithmetic operations.</li> </ul> <b>Operations with polynomials</b> <ul style="list-style-type: none"> <li>▪ Addition, Subtraction, Multiplication</li> <li>▪ Special Products <ul style="list-style-type: none"> <li>▪ Product of the Sum and Difference of Two Terms</li> <li>▪ Square of a Binomial</li> </ul> </li> </ul> <b>Factoring</b>	R.5, 3.1, R.1, R.2
Wednesday, July 23	7.	<b>Test 1 (Days 01 – 06)</b>  <b>Solving Quadratic Equations in One Unknown</b> <ul style="list-style-type: none"> <li>▪ Square Root Property Method (both real and non-real solutions)</li> <li>▪ Zero Product Property Method (real solutions)</li> </ul>	3.3
Monday, July 28	8.	<b>Solving Quadratic Equations in One Unknown</b> <ul style="list-style-type: none"> <li>▪ Quadratic Formula</li> <li>▪ Graphical by Finding Real Zeroes</li> </ul> <b>Application problems involving quadratic equations</b>	3.3, 3.4
Wednesday, July 30	9.	<b>Quadratic Inequalities</b> <b>Operations With Rational Expressions</b>	3.3, R.3, 3.6
Monday, August 04	10.	<b>Quiz 3 (Days 07 – 09)</b>  <b>Graphing Rational Functions</b> <ul style="list-style-type: none"> <li>▪ Asymptote</li> <li>▪ Domain, Range</li> </ul>	4.1, 4.2
Wednesday, August 06	11.	<b>Graphing Rational Functions and Inequalities</b>	4.2, 4.3

<u>Date</u>	<u>Day</u>	<u>Topics</u>	<u>Sections</u>
Monday, August 11	12.	<b>Test 2 (Days 07 – 11)</b>  Integral and Rational Exponents	R.1, R.4, R.5
Wednesday, August 13	13.	<b>Exponential Functions and Their Graphs</b> <ul style="list-style-type: none"> <li>▪ Definition of an Exponential Function</li> <li>▪ Graph of exponential functions</li> <li>▪ The number e</li> <li>▪ Applications</li> </ul>	5.2
Monday, August 18	14.	<b>Quiz 4 (Days 12 – 13)</b>  <b>Logarithmic Functions and Their Graphs</b> <ul style="list-style-type: none"> <li>▪ Definition of a Logarithmic Function</li> <li>▪ Domain and Range</li> <li>▪ Find Logarithms Analytically</li> <li>▪ Common logarithm</li> <li>▪ Natural logarithm</li> <li>▪ Properties of Logarithms</li> <li>▪ Change of Base Rule</li> <li>▪ Graph logarithmic functions</li> </ul>	5.3, 5.4
Wednesday, August 20	15.	<b>Exponential and Logarithmic Equations With Applications</b>	5.3, 5.5, 5.6
Monday, August 25	16.	<b>Quiz 5 (Days 14 – 15)</b>  <b>Systems of Linear Equations With Two Unknowns and Applications</b> <ul style="list-style-type: none"> <li>▪ 3 possible cases</li> <li>▪ Solve systems: Substitution Method; Elimination (or Addition) Method</li> <li>▪ Solve application problems involving linear systems.</li> </ul>	7.1
Wednesday, August 27	17.	<b>Matrices and Their Applications</b> <ul style="list-style-type: none"> <li>▪ Properties and Operations</li> <li>▪ Solution of Linear Systems by Matrix Inverses</li> </ul>	7.4, 7.6

<u>Date</u>	<u>Day</u>	<u>Topics</u>	<u>Sections</u>
Wednesday, September 03	18.	<b>Test 3 (Days 12 – 17)</b>  <b>Conics</b> <ul style="list-style-type: none"> <li>▪ Circles <ul style="list-style-type: none"> <li>▪ Graph using paper and pencil</li> <li>▪ Vertex at origin</li> <li>▪ Vertex other than at origin</li> <li>▪ Given characteristics, determine equation</li> </ul> </li> </ul>	6.1
Monday, September 08	19.	<b>Conics</b> <ul style="list-style-type: none"> <li>▪ Circles and Parabolas <ul style="list-style-type: none"> <li>▪ Graph using paper and pencil</li> <li>▪ Graph using calculator</li> <li>▪ Vertex at origin</li> <li>▪ Vertex other than at origin</li> <li>▪ Given characteristics, determine equation</li> </ul> </li> </ul>	6.1
Wednesday, September 10	20.	<b>Final Examination (Days 01 – 19)</b>	

**Changes to this Course Info**

***This syllabus is subject to change at any time during this quarter. If that happens, the revised document will be posted and students will be notified of the change.***