# MATH 1111
## COLLEGE ALGEBRA
### MASTER COURSE SYLLABUS

*Instructors will provide students with additional course-specific information, including attendance/makeup policies, assignment/test scheduling, and instructor contact information, as necessary and appropriate.*

| | |
|---|---|
| **Prerequisite(s):** | Degree program admission math competency OR successful completion of required math learning support courses with C or higher. |
| **Co-requisite(s):** | None |
| **Term(s) Offered:** | Offered every semester |
| **Class Hours:** | 3 |
| **Lab Hours:** | 0 |
| **Credit Hours:** | 3 |

## Course Description

This course emphasizes techniques of problem solving using algebraic concepts. Topics include fundamental concepts of algebra, equations and inequalities, functions and graphs, and systems of equations; optional topics include sequences, series, and probability or analytic geometry.

## Course Competencies and Student Learning Outcomes

**Fundamental Concepts of Algebra**

| Order | Description |
|---|---|
| 1 | Demonstrate the concept of sets and set notation. |
| 2 | Locate complements, unions, and intersections of sets. |
| 3 | Compute the value of expressions using the laws of exponents. |
| 4 | Simplify radicals and use them in arithmetic operations. |
| 5 | Perform arithmetic operations on polynomials. |
| 6 | Identify all factors of algebraic expressions. |
| 7 | Perform arithmetic operations on rational expressions |
| 8 | Define complex numbers |
| 9 | Perform arithmetic operations on complex numbers. |

**Equations and Inequalities**

| Order | Description |
|---|---|
| 1 | Solve linear equations. |
| 2 | Solve application problems involving linear equations |
| 3 | Solve quadratic equations. |
| 4 | Solve application problems involving quadratic equations. |
| 5 | Solve linear inequalities. |
| 6 | Solve quadratic inequalities. |
| 7 | Solve rational inequalities. |
| 8 | Solve exponential equations. |
| 9 | Solve application problems involving exponential equations. |
| 10 | Solve logarithmic equations. |
| 11 | Solve application problems involving logarithmic equations. |

**Functions and Graphs**

| Order | Description |
|---|---|
| 1 | Plot ordered pairs. |
| 2 | Define relations and functions. |
| 3 | Construct a graph of linear functions. |
| 4 | Construct a graph of quadratic functions. |
| 5 | Construct a graph of exponential functions. |
| 6 | Construct a graph of logarithmic functions. |

**Systems of Equations**

| Order | Description |
|---|---|
| 1 | Solve systems of linear equations with two unknowns. |
| 2 | Solve application problems involving linear systems. |

**Optional Topics**

| Order | Description |
|---|---|
| 1 | Set-up and solve problems with direct, inverse, and joint variations. |
| 2 | Solve absolute value equations and inequalities. |
| 3 | Solve systems of linear equations with matrices.. |
| 4 | Solve simple linear programming problems.. |
| 5 | Construct conics which might include hyperbolas, parabolas, ellipses, and circles.. |
| 6 | Identify a pattern in a sequence of numbers and use the pattern to extend an arithmetic sequence. |
| 7 | Identify a pattern in a sequence of numbers and use the pattern to extend a geometric sequence. |
| 8 | Use mathematical induction to prove statements. |
| 9 | Use the Binomial Theorem to expand the binomial. |
| 10 | Use the Binomial Theorem to find indicated terms without expanding. |
| 11 | Define permutations and combinations. |
| 12 | Use permutations and combinations to solve application problems. |
| 13 | Define probability. |
| 14 | Calculate probability of events in application problems. |

## Required Textbook(s) and Materials

Students enrolled in this course are obligated to have the following:

Thinkwell's *College Algebra* Subscription Authorization Code. (www.thinkwell.com) ISBN 978-1-60538-076-6. *Each student ***must*** purchase a new code or have a prior subscription code in their name and email address. (Available for a year) Buying used codes under another student's name and/or email is ***strictly prohibited*** by Thinkwell.

To Access Thinkwell:

1. Go To http://www.thinkwell.com
2. Click Register
3. Under Classroom and Distance Learning
   a. If you already have a subscription/authorization code, enter it in the blank provided and follow the prompts
   b. If you do not have a subscription/authorization code, please follow the prompts.
4. From the pull down menus select the following:
   a. State: Georgia
   b. School: Athens Technical College
   c. Course/Section: MATH 1111 College Algebra – Section XX, Instructor (Locate your section and instructor's name)

Ask your instructor prior to purchasing: Thinkwell *College Algebra* 2nd Edition Print Textbook: ISBN 978-1-60538-077-3

Scientific Calculator: Recommended TI 30 XIIS

## Grading Policy and Criteria

Tests (minimum of 5):……..60%

Homework/Quizzes/Thinkwell Assignments:……..10%

Final Exam:……30%

The final examination is a proctored, on-campus, closed-book, closed-note examination based on the Student Learning Outcomes. On-line students who live outside of Northeast Georgia may choose to make arrangements to take the exam in a proctored situation at a pre-approved site. The site and proctor must be approved at least two weeks prior to the final exam date.

## Grading Scale

The grading scale is detailed in the *Catalog and Student Handbook* and listed below for reference. All faculty members follow this scale when assigning grades to reflect a given student's performance in the classroom.

| Grade | Numerical Equivalent | Grade Point |
|---|---|---|
| A/A* | 90-100 | 4 |
| B/B* | 80-89 | 3 |
| C/C* | 70-79 | 2 |
| D/D* | 60-69 | 1 |
| F/F* | 0-59 | 0 |

Effective Summer Quarter 2006, Athens Technical College replaced the S/U grading system used for learning support classes with an A*-F* grading system. The registrar uses an asterisk (A*, B*, C*, D*, F*, W*, WF*, WP*) to designate learning support course grades on transcripts and grade reports because these grades are not components of the term grade point average.

## Academic Support Center

The Academic Support Centers of Athens Technical College (ATC) provide free tutoring for enrolled students. Both instructors and peer tutors provide tutoring in almost all subjects offered by the college. Information about the Center is accessible via the ATC website at http://www.athenstech.edu/StudentDevelopmentServices/AcademicSupportCenter. To find out the specific services available on the Athens, Greene, and Walton Campuses, please call (706) 583-2839. To contact the Academic Support Center on the Elbert County Campus, please call (706) 213-2129.

## Attendance

Regular class attendance is important and expected. The college considers both tardiness and early departure from class as forms of absenteeism. Students absent from class for any reason are still responsible for all work missed. Instructors have the right to determine whether work missed can be made up and have the liberty to set reasonable expectations for attendance based on frequency of class meetings and on the instructional delivery method, subject, type, and level of the class. Class attendance policies will be clearly stated for students by their respective instructors on separate documents (course outlines/schedules) or appendices to the master syllabus.

## Course Withdrawal

Students may withdraw from a course without academic penalty until the midpoint of the term. Students withdrawing after the midpoint of the term receive grades of WP – Withdrawal Passing, or WF – Withdrawal Failing. Students who stop attending class(es) without formally withdrawing risk earning a final grade of F, which will appear on the academic transcript. Withdrawing from a course may impact financial aid status, academic standing, and GPA. Refer to the ATC *Catalog and Student Handbook* for further details. http://www.athenstech.edu/Catalog/.

## Course Technology

Course addendum will provide details concerning the use of technology in the course. Course schedule types include **web-enhanced** – taught face-to-face; **online** – taught online using the internet, may require proctored exam; **hybrid** – class time is split between face-to-face and online; **video conference** – taught at two or more campus locations simultaneously with instructor located at one of the classroom locations. More details are available on the Athens Technical College website.
http://www.athenstech.edu/eLearning/CourseList.cfm

## Continuation of Instruction

In the event of severe weather or other emergency, students will be expected to continue participating in learning activities via ANGEL, Athens Technical College email, or other modality. Instructors will provide a plan for the continuation of instruction.

## Work Ethics

To fulfill the responsibility to teach essential workplace ethics, the college provides students instruction in, and evaluates students on, the following ten work ethics traits: attendance, character, teamwork, appearance, attitude, productivity, organizational skills, communication, cooperation, and respect. To best equip students for successful workplace experiences in their chosen profession, instruction and evaluation takes place in the context of their program of study.

## Academic Honesty

Academic honesty is expected at all times. Any student found to have engaged in academic misconduct such as cheating, plagiarism, or collusion is subject to disciplinary sanctions as outlined in the Student Code of Conduct detailed in the ATC *Catalog and Student Handbook* . See the following link for the complete Academic Honesty policy.
http://www.athenstech.edu/StudentAffairs/AcademicHonesty/Academic%20Honesty.pdf
Students are also advised to complete the tutorial on Academic Honesty available here:
http://www/athenstech.edu/StudentAffairs/AcademicHonesty

## Americans with Disabilities Act

It is our goal at Athens Technical College to provide equal access to education for all students. Any student with a documented disability is eligible to receive reasonable academic adjustments and auxiliary aids in the classroom and/or for testing at Athens Technical College, as long as appropriate documentation of the disability has been submitted to the Disability Services Office in a timely manner. Students can access the application packet on our website.
http://www.athenstech.edu/CurrentStudents/orientation/files/disability_services_application.pdf

## Cell Phones and Electronic Devices

Cell phone use in the classroom for non-instructional purposes, with the exception of receiving emergency notifications, is prohibited.

## Food/Drinks in Classroom

Food and beverages (other than water) are not allowed in classrooms/labs.

## Communication with ATC Faculty and Staff

Students, faculty, and staff must use Athens Technical College email and ANGEL accounts for all college-related communications. Students are obligated to check their email and ANGEL accounts on a regular basis, preferably daily.

## Warranty of Graduates

The Technical College System of Georgia warranties every graduate of technical programs in which students may earn technical certificates of credit, diplomas, or associate degrees. The warranty guarantees that graduates demonstrate the knowledge and skills and can perform each competency as identified in the industry-validated standards established for every program of study. If one of our graduates educated under a standard program or his/her employer finds that the graduate is deficient in

one or more competencies as defined in the course/program standards, Athens Technical College will retrain the employee at no instructional cost to the employee or the employer. This guarantee is in effect for two years after graduation.

## TEACH Act

According to the TEACH Act of 2002, Athens Technical College is obligated to advise you that instructional material included in this course may be subject to copyright protection. As such, you must not share, duplicate, transmit, or store the material of this course beyond the purpose and time frame explicitly stated in the syllabus of your course. If you are not certain whether a particular piece of material is covered by copyright protection, you should contact your instructor and obtain his/her written clarification. Failing to observe copyright protection is a violation of law.