



BEGINNING ALGEBRA

Revised 8/03/2010

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COURSE NUMBER: MAT 101

PREREQUISITE(S): Satisfactory placement.

CO-REQUISITE(S): None

COURSE DESCRIPTION: This course includes the study of rational numbers and their applications, operations with algebraic expressions, linear equations and applications, linear inequalities, graphs of linear equations, operations with exponents and polynomials, and factoring.
MAT 101 equates to MAT 152

TEXTBOOK: Martin-Gay, K. Elayn. *Beginning and Intermediate Algebra, 4th Edition*. Upper Saddle River, New Jersey: Prentice-Hall, 2009.

REFERENCE(S): N/A

OTHER REQUIRED MATERIALS, TOOLS, AND EQUIPMENT: None. Calculators with algebraic symbolic operations are not allowed without instructor's approval. Scientific calculators may be used beginning with Chapter 2.

METHOD OF INSTRUCTION: Concepts will be taught by lecture/demonstration and by group problem-solving. Student participation will be required. Audio-visual aids will be used when appropriate.

GRADING SYSTEM:

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

**GRADE
CALCULATION
METHOD:**

There will be a minimum of four (4) tests and a final exam. The exam will not count more than one-third of the final course grade. (See instructor's class Policy Sheet details.)

**ATTENDANCE
POLICY:**

The student is responsible for punctual and regular attendance in all classes, laboratories, clinical, practica, internships, field trips, and other required class activities. The College does not grant excused absences; therefore, students are urged to reserve their absences for emergencies. When illness or other emergencies occur, the student is responsible for notifying instructors and completing missed work if approved for late submission by instructors.

Mathematics Department Attendance and Participation Procedure for Lecture Classes:

- Attendance and participation in class is essential to the learning of mathematics.
- Students are expected to be in class, to be on time, and to stay for the entire class.
- Students are responsible for any missed work.
- Do not expect tutors, lab assistants and/or instructors to re-teach course content you miss. You need to have attempted the assigned materials before asking for help.

Instructors maintain attendance records. However, it is the student's responsibility to withdraw from a course. A student enrolling in and attending at least one course session remains enrolled until the student initiates a withdrawal.

Withdrawal Policy: During the first 75% of the course, a student may initiate withdrawal and receive a grade of W. A student cannot initiate a withdrawal during the last 25% of the course. Extenuating circumstances require documentation and approval by the appropriate department head and academic dean.

Absences for Religious Holidays: Students who are absent from class in order to observe religious holidays are responsible for the content of any activities missed and for the completion of assignments occurring during the period of absence. Students who anticipate their observance of religious holidays will cause them to be absent from class and do not wish such absences to penalize their status in class should adhere to the following guidelines:

1. Observance of religious holidays resulting in *three or fewer* consecutive absences: Discuss the situation with the instructor and provide written notice at least one week prior to the absence(s). Develop (in writing) an instructor-approved plan which outlines the make-up of activities and assignments.
2. Observances of religious holidays resulting in *four or more* consecutive absences: Discuss the situation with the instructor and provide the instructor with written notice within the first 10 days of the academic term. Develop an instructor-approved plan which outlines the make-up of activities and assignments.

**ACADEMIC
CONDUCT:**

ACADEMIC DISHONESTY: Students are expected to uphold the integrity of the College's standard of conduct, specifically in regards to academic honesty. All forms of academic dishonesty including, but not limited to, cheating on assignments/tests, plagiarism, collusion, and falsification of information will call for disciplinary action. Disciplinary action imposed may include one or more of the following: written reprimand, loss of credit for assignment/test, termination from course, and probation, suspension, or expulsion from the College. For further explanation of this and other conduct codes, please refer to the Student Handbook.

CELLULAR PHONES AND PAGERS/BEEPERS:

Cellular phones, pagers and beepers are not permitted to be turned on or used within the classroom. Use of these devices during classroom time will be considered a violation of the student code as it relates to “disruptive behavior.”

**SCC MATHEMATICS DEPARTMENT POLICY:
NO ELECTRONIC DEVICES WILL BE USED IN
THE CLASSROOM WITHOUT PRIOR
APPROVAL OF INSTRUCTOR.**

**Mathematics Departmental Procedure For
Violation of Usage of Electronic Devices:**

First time violation – Student will cut off electronic device (cell phone without answering it) and place the device on the instructor’s desk until the end of class. The instructor will remind the student of policy and procedure.

Subsequent violation – Student will cut off electronic device (cell phone without answering it) and place the electronic device on the instructor’s desk until the end of class. Student will be referred to the Chief Student Services Officer for disciplinary action and not allowed to return to class without written notification from the Chief Student Services Officer whose office is located in the Student Services Building.

**DAY EMERGENCY NUMBER
RECORDS (864) 592-4681**

**EVENING EMERGENCY NUMBER
EVENING SERVICES (AFTER 4:30 PM)
(864) 592-4830**

**CLASS/LAB
PROCEDURES:**

None

ACCOMMODATIONS: Students who need special accommodations in this class because of a documented disability should notify Student Disability Services. You may contact Student Disability Services by calling, (864) 592-4811 (voice and TDD), toll-free 1-800-922-3679; via email through the Spartanburg Community College website at www.sccsc.edu/SDS/; or by visiting the office located in the Dan Lee Terhune Student Services Building, Room 112, of the Spartanburg Community College campus. By contacting Student Disability Services early in the semester, students with disabilities give the College an opportunity to provide necessary support services and appropriate accommodations.

COURSE
COMPETENCIES &
OBJECTIVES:

Upon satisfactory completion of this course, the students should be able to demonstrate competency in the General Education Outcome listed as “their ability to express themselves effectively in quantitative and qualitative terms” in the following competencies and objectives:

- I. Perform basic operations with signed numbers.
 1. Add real numbers.
 2. Subtract real numbers.
 3. Multiply and divide real numbers.

- II. Solve and graph basic linear equations.
 1. Simplify algebraic expressions.
 2. Solve equations using the addition-subtraction principle.
 3. Solve equations using the multiplication-division principle.
 4. Solve and graph linear equations.
 5. Solve for a specific variable.
 6. Plot ordered pairs on the rectangular coordinate system.
 7. Calculate the slope of a line.
 8. Employ special forms of linear equations.

- III. Solve application problems.
 1. Apply the steps for problem solving.
 2. Use formulas to solve word problems.
 3. Solve a formula or equation for one of its variables.

- IV. Perform operations with powers.
 1. Use the product and power rules for exponents.
 2. Use the quotient rule, and simplify expressions with zero exponents.
 3. Simplify expressions with negative exponents, and use scientific notation.
 4. Add and subtract polynomials.
 5. Multiply polynomials.
 6. Multiply binomials by inspection.
 7. Divide polynomials.

- V. Multiply and factor algebraic expressions.
 1. Factor out the greatest common factor.
 2. Factor trinomials of the form $x^2 + bx + c$.
 3. Factor trinomials of the form $ax^2 + b + c$.
 4. Factor special forms of polynomials.
 5. Determine the most appropriate strategy for factoring a polynomial.
 6. Solve equations by factoring.

Course Outline Math 101

1.5 Adding Real Numbers	3 hours
1.6 Subtracting Real Numbers	
1.7 Multiplying and Dividing Real Numbers	
1.8 Properties of Real Numbers	
	11 hours
2.1 Simplifying Algebraic Expressions	
2.2 The Addition and Multiplication Properties of Equality	
2.3 Solving Linear Equations	
2.4 An Introduction to Problem Solving	
2.5 Formulas and Problem Solving	
2.7 Further Problem Solving (optional)	
2.8 Solving Linear Inequalities	
3.1 The Rectangular Coordinate System	8 hours
3.2 Graphing Linear Equations	
3.3 Intercepts	
3.4 Slope and Rate of Change	
3.5 Equations of Lines	
3.6 Functions	
5.1 Exponents	11 hours
5.2 Polynomial Functions and Adding and Subtracting Polynomials	
5.3 Multiplying Polynomials	
5.4 Special Products	
5.5 Negative Exponents and Scientific Notation	
5.6 Dividing Polynomials	
5.7 Synthetic Division and the Remainder Theorem (optional)	
6.1 The Greatest Common Factor and Factoring by Grouping	8 hours
6.2 Factoring Trinomials of the form $x^2 + bx + c$	
6.3 Factoring Trinomials of the form $ax^2 + bx + c$ and Perfect Square Trinomials	
6.4 Factoring Trinomials of the form $ax^2 + bx + c$ by Grouping	
6.5 Factoring Binomials	
6.6 Solving Quadratic Equations by Factoring	
6.7 Quadratic Equations and Problem Solving	

HOMEWORK FOR MAT 101
Beginning and Intermediate Algebra, 4th ed., Martin-Gay, 2009

<u>Section</u>	<u>Page</u>	<u>Problems</u>
1.5	40	1,3,13,17,29,33,39,43,51,55,57,65,71,75,77
1.6	46	1,7,13,15,27,31-59 odd,65,67,75,79,81,
1.7	56	1,9,19,27,33,35,39,55,57,63-85 odd,97,101
1.8	63	1,5,11,13,27,31,47,51,55,63,69,73,75,77,79
2.1	79	2,7,11,21,29,33,44,45,53,63,67-81 odd
2.2	89	1,7,13,17,21,23,27,31,35,47,51,59,65,71,75,79,91
2.3	98	5,7,17,23,27,37,41,51,63,69
2.4	107	1,3,5,9,29,43
2.5	118	1,5,7,9,17,21,23,25,35,41,49
2.8	149	1,3,5,11,13,15,17,19,23,27,53,55,57,75,77,81
3.1	176	3,7,13,17,39,41,45,47,49,61,65
3.2	187	1,5,7,13,21,31,33,45
3.3	196	1,3,5,7,15,19,21,25,27,29
3.4	209	1,3,5,9,11,13,25,27,51-57 odd
3.5	220	3,11,13,17,23,31,33,39,41,45,47,49,51,59,61,65,67
3.6	230	1,5,7,13,15,39,45,47,49,53,63,67
5.1	309	5,7,11,13,21,27,31,35,55,57,65,71,73,101
5.2	321	1,5,9,11,13,17,19,23,29,35,51,57,61
5.3	327	9,11,29,31,41,55,57,61,65,67,69
5.4	334	3,9,11,23,25,41,45,47,55,67
5.5	343	1,3,5,9,11,13,15,33,39,45,57,69,83,85,97,103
5.6	350	5,9,15, 43,47
5.7	355	1,5,7,15,17,19,23,29
6.1	373	1,5,7,9,11,21,25,29,31,35,53,55,59,67,77,83
6.2	380	1,5,11,13,15,21,23,25,33,43,49,51,57,59
6.3	388	1,9,11,13,17,19,23,25,29,37,49,59,63,89,91,121
6.4	393	1,5,7,13,15,19,23,25,29,45,47,49,53
6.5	400	1,3,7,11,17,23,25,27,41,43,53,59,63,65
6.6	412	1,3,5,7,11, 25-41 odd
6.7	420	1,3,5,7,11.13.45