**College Algebra Syllabus**

**Course Title/Number** MTH 127 College Algebra CRN 4897 Sec 143

**Semester/Year** Fall-2018

**Days/Time** Mon – Fri 11:34 am – 12:24 pm

**Location** West side High School Clearfork, WV 24822

**Instructor** Rhonda Cole

**Office** Room 1068

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**Office Hours** 6:50 am – 3:48 pm

**University Policies** By enrolling in this course, you agree to the University Policies listed below. Please read the full test of each policy by going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to [www.marshall.edu/academic-affairs/policies/](http://www.marshall.edu/academic-affairs/policies/). Academic Dishonesty/Excused Absence Policy for Undergraduates/Computing Services Acceptable Use/Inclement Weather/Dead Week/Students with Disabilities/Academic Forgiveness/Academic Probation and Suspension/Academic Rights and Responsibilities of Students/Affirmative Action/Sexual Harassment.

**Course Description from Catalog**

A brief but careful review of the main techniques of algebra. Polynomial, rational, exponential, and logarithmic functions. Graphs, equations and inequalities, sequences.

**Credit hours** MTH 127: 5 hours

**List of topics**

**•** Solving equations in one variable of the following types:

• linear equations and inequalities, basic equations with absolute value

• quadratic equations with real solutions (factoring and quadratic formula only, no completing the square)

• equations with rational expressions

• equations with radicals • equations with exponential and/or logarithmic expressions

• definition of "function", "domain", and "range"

• graphing lines • linear and quadratic functions and their applications

• identification of other common functions and their applications

• graphing functions with translation and reflection (no scaling)

• identifying symmetry in functions (even/odd) • graphically determine where a function is increasing, decreasing, and constant

• composition of functions and inverse functions Polynomial and Rational Functions

• polynomial long division (synthetic division is optional)

• remainder and factor theorems

• basic graph sketching including end behavior

• intermediate value theorem

• equations of asymptotes - vertical and horizontal (no oblique) Exponential and logarithmic functions

• basic properties of exponential functions and their graphs

• basic properties of logarithmic functions and their graphs

• Applications of exponential and logarithmic functions (population growth, compound interest, laws of cooling, decibels, Richter scale, etc.)

•Solving systems of linear equations in two variables using substitution and elimination

**Learner Outcomes**

Students will

• Identify and implement appropriate solution methods for single-variable equations

• Identify and graph standard algebraic functions

• Interpret graphs of functions

• Construct functions to model applications

• Communicate written mathematics using appropriate notation and explanation in English

•Work with and manipulate expressions involving exponents

•Restate radical equations in terms of variables

•Use skills learned regarding linear inequalities in two variables

•Find the constant of proportionality given certain information about a variation, and formulate unknown information using this constant.

•Work with polynomials

•Graph hyperbolas, find their vertices, and describe them with equations

•Estimate the behavior of growing populations

**Assessments**

•Students will be given exam questions regularly

•Students will perform presentations that evaluate mastery of a particular outcome

•Students will perform operations on the board for assessment

•Students will work in groups to come to conclusions

**Suggested textbook** Sisson, College Algebra, 2nd edition, ISBN 978-1-932628-29-6