# **Correlation to the 2016 Mathematics Standards of Learning and Curriculum Framework – Algebra II**

**Text/Instructional Material Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Publisher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Committee Member: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_**

**NOTE: The rating cells in the tables below are empty in order for division-level review teams to utilize this form.**

## **Section I. Correlation with the Mathematics 2016 SOL and Curriculum Framework**

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| **AII.1** |  |  |  |
| **AII.2** |  |  |  |
| **AII.3** |  |  |  |
| **AII.4** |  |  |  |
| **AII.5** |  |  |  |
| **AII.6** |  |  |  |
| **AII.7** |  |  |  |
| **AII.8** |  |  |  |
| **AII.9** |  |  |  |
| **AII.10** |  |  |  |
| **AII.11** |  |  |  |
| **AII.12** |  |  |  |

## **Section II. Additional Criteria: Instructional Planning and Support**

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| **Criteria** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| **1.** Materials emphasize the use of effective instructional practices and learning theory. |  |  |  |
| * 1. Students are guided through critical thinking and problem-solving approaches.
 |  |  |  |
| * 1. Concepts are introduced through concrete experiences that use manipulatives and other technologies.
 |  |  |  |
| * 1. Multiple opportunities are provided for students to develop and apply concepts through the use of calculators, hand held devices, computers, and other technologies.
 |  |  |  |
| * 1. Students use the language of mathematics including specialized vocabulary and symbols.
 |  |  |  |
| * 1. Students use a variety of representations (graphical, numerical, symbolic, verbal, and physical) to connect mathematical concepts.
 |  |  |  |
| 1. The mathematics content is significant and accurate.
 |  |  |  |
| * 1. Materials are presented in an organized, logical manner which represents the current thinking on how students learn mathematics.
 |  |  |  |
| * 1. Materials are organized appropriately within and among units of study.
 |  |  |  |
| * 1. Format design includes titles, subheadings, and appropriate cross-referencing for ease of use.
 |  |  |  |
| * 1. Writing style, length of sentences, vocabulary, graphics, and illustrations are appropriate.
 |  |  |  |
| * 1. Level of abstraction is appropriate, and practical examples, including careers, are provided.
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| * 1. Sufficient applications are provided to promote depth of application.
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| 1. Materials present content in an accurate, unbiased manner.
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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.1 The student will |  |  |  |
| 1. add, subtract, multiply, divide, and simplify rational algebraic expressions;
 |  |  |  |
| 1. add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents; and
 |  |  |  |
| 1. factor polynomials completely in one or two variables.
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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.2 The student will perform operations on complex numbers and express the results in simplest form using patterns of the powers of *i.* |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.3 The student will solve |  |  |  |
| 1. absolute value linear equations and inequalities;
 |  |  |  |
| 1. quadratic equations over the set of complex numbers;
 |  |  |  |
| 1. equations containing rational algebraic expressions; and
 |  |  |  |
| 1. equations containing radical expressions.
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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
|  AII.4 The student will solve systems of linear-quadratic and quadratic-quadratic  equations, algebraically and graphically. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.5 The student will investigate and apply the properties of arithmetic and geometric sequences and series to solve practical problems, including writing the first *n* terms, determining the *n*th term, and evaluating summation formulas. Notation will include ∑ and *an*. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.6 For absolute value, square root, cube root, rational, polynomial,  exponential, and logarithmic functions, the student will  |  |  |  |
| 1. recognize the general shape of function families; and
 |  |  |  |
| 1. use knowledge of transformations to convert between equations

 and the corresponding graphs of functions. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.7 The student will investigate and analyze linear, quadratic, absolute value,square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include |  |  |  |
| 1. domain, range, and continuity;;
 |  |  |  |
| 1. intervals in which a function is increasing or decreasing;
 |  |  |  |
| 1. extrema;
 |  |  |  |
| 1. zeros;
 |  |  |  |
| 1. intercepts;
 |  |  |  |
| 1. values of a function for elements in its domain;
 |  |  |  |
| 1. connections between and among multiple representations of functions using verbal descriptions, tables, equations, and graphs;
 |  |  |  |
| h) end behavior; |  |  |  |
| 1. vertical and horizontal asymptotes;
 |  |  |  |
| 1. inverse of a function; and
 |  |  |  |
| 1. composition of functions algebraically and graphically.
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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.8 The student will investigate and describe the relationships among  solutions of an equation, zeros of a function, *x*-intercepts of a graph, and  factors of a polynomial expression. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.9 The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve practical problems, using mathematical models of quadratic and exponential functions.  |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.10 The student will represent and solve problems, including practical  problems, involving inverse variation, joint variation, and a combination of direct and inverse variations. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.11 The student will  |  |  |  |
| * 1. identify and describe properties of a normal distribution;
 |  |  |  |
| * 1. interpret and compare *z*-scores for normally distributed data; and
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| * 1. apply properties of normal distributions to determine probabilities associated with areas under the standard normal curve.
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| **Mathematics Standard of Learning** | **Adequate****Rating** | **Limited****Rating** | **No Evidence Rating** |
| AII.12 The student will compute and distinguish between permutations and combinations. |  |  |  |

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