

WARREN COUNTY SCHOOL DISTRICT

Planned Instruction

Course Title: Applied Algebra II

Course Number: 00211

Suggested Educational Level(s) 9th through 12th

Suggested Periods Per Week: 5 **Length of Period:** 40 minutes

Suggested Length Of Course: 1 year

Units Of Credit (If Appropriate): 1

Date Written: November 2004 **Date Approved:** June 13, 2005

Date Reviewed: 2004-2005 **Implementation Year:** 2005-2006

Teacher Certification Required: BS/BA in Secondary Education Mathematics

Relationship to Other Planned Instruction: This is the second of a three-year applied sequence.

Prerequisites: A student must have taken and passed Applied Algebra I with at least a 60% average/may have taken Algebra I and earned at 60% but less than 70% average.

Special Requirements: This course may not be taken out of sequence. Modifications will be made for students with special needs.

Teachers will emphasize standards addressed in the PSSA Assessment Anchors.

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Standards addressed (code and description):

2.1.11	Numbers, Numbers Systems, and Number Relationships
2.2.11	Computation and Estimation
2.3.11	Measurement and Estimation
* 2.4.11	Mathematical Reasoning and Connections
2.5.11	Mathematical Problem Solving and Communication
2.8.11	Algebra and Functions
2.9.11	Geometry
2.10.11	Trigonometry
* This is a component of all other standards taught	

COURSE DESCRIPTION:

Applied Algebra II Topics to be studied will include solving and graphing linear equations, systems of linear equations and inequalities, factoring, square roots, quadratic equations, trigonometry, rational expressions and functions as well as irrational and complex numbers.

Outline of Content Sequence and Recommended Time:

10 days	I. Review
15 days	II. Solving Linear Equations with word problems including estimation
15 days	III. Systems of Equations
17 days	IV. Linear Inequalities
23 days	V. Factoring
15 days	VI. Simplifying square roots
15 days	VII. Quadratic Equations
15 days	VIII. Trigonometry
20 days	IX. Rational Expressions
10 days	X. Irrational and Complex Numbers
<u>15 days</u>	XI. Functions
170 days	

Specific Educational Objectives to be taught:

- I. Review (numbers and polynomials) (2.1.11A, 2.5.11A, 2.5.11B, 2.5.11C, 2.5.11D)

August - September

- ☐ Prime, Composite, GCF and LCM divisibility rules
- ☐ Order of Operations
- ☐ Exponents

- i. Review
- ii. Zero and negative
- iii. Rational

II. Solving Linear Equations with word problems including estimation (2.3.11A, 2.6.11C, 2.8.11F, 2.8.11G, 2.8.11H)

Septmber-
October

- ☐ Reviewing one step and multi step equations
- ☐ Review consecutive numbers, number relationships, age problems
- ☐ Work problems, Distance problems, mixture problems including estimation

III. Systems of Equations(2.2.11F, 2.6.11B, 2.8.11F, 2.8.11G, 2.8.11H, 2.8.11N)

October

- ☐ Review
- ☐ Substitution
- ☐ Graphing

IV. Linear Inequalities (2.2.11F, 2.5.11B, 2.8.11D, 2.8.11J, 2.8.11N)

October

- ☐ Graphing
- ☐ Compound and/or

V. Factoring Polynomials(2.5.11A, 2.5.11B, 2.5.11C, 2.5.11D)

- ☐ Difference of two squares
- ☐ Trinomials

November

- i. Sum
- ii. Difference
- iii. Perfect square
- iv. Trial and error

VI. Simplifying Square Roots(2.2.11A, 2.5.11A)

- ☐ Perfect squares (with numbers and variables)
- ☐ Non-perfect squares (with numbers and variables)
- ☐ Simplify expressions that involve radicals
- ☐ Solving equations containing radicals

December

VII. Quadratic equations (2.4.11E, 2.8.11N, 2.9.11B, 2.9.11E, 2.9.11G, 2.10.11A, 2.10.11B)

January

- ☐ Zero product property
- ☐ Quadratic formula
 - i. Min/max

ii. Parabolas including graphing

VIII. Trigonometry (2.10.11A, 2.10.11B)

February

- ☐ Functions
- ☐ Right Triangles
- ☐ Pythagorean Theorem

IX. Rational Expressions (2.1.11A, 2.5.11A)

March

- ☐ Simplify expressions using the laws of exponents
- ☐ Solve and use fractional equations
- ☐ Applications of rates and change

X. Irrational and Complex numbers(2.3.11A, 2.4.11E, 2.5.11B)

April

- ☐ Find and use decimal representation of real numbers
- ☐ Simplify complex numbers

XI. Functions (2.5.11B, 2.7.11E, 2.8.11O, 2.8.11O, 2.8.11Q, 2.8.11R, 2.8.11T)

May

- ☐ Notation, Domain, and Range
- ☐ Direct
- ☐ Inverse
- ☐ Joint

Summative Assessments: A team of WCSD math instructors representing all the high schools will develop a district wide summative assessment.

Required/Approved Textbooks and Materials:

Book Title: Algebra One

Publisher: Glencoe/McGraw-Hill

ISBN #: 0-07-822894-8

Copyright: 2001

Date of Adoption: August 12, 2002

****This material will be supplemented using Algebra Two also previously adopted and currently used in Algebra Two for the college preparatory sequence.**