

COURSE TITLE: Advanced Algebra  
COURSE LENGTH: 1 year  
COURSE CREDIT: 1 credit

COURSE TYPE: elective  
GRADE LEVEL: 12  
PREREQUISITE: Algebra II, teacher approval

COURSE GOALS:

1. Students will graph rational functions, perform operations with rational expressions, and solve rational equations.
2. Students will be able to write and graph equations of conic sections as well as solve quadratic systems.
3. Students will use permutations and combinations, find probabilities, and construct binomial distributions.
4. Students will assess measures of central tendency and dispersion, use normal distributions, and evaluate samples.
5. Students will analyze sequences, calculate sums of series, and use recursive rules.
6. Students will evaluate trigonometric functions, use inverse trigonometric functions, and apply the law of sines and cosines.
7. Students will graph trigonometric functions, solve trigonometric equations, and apply trigonometric formulas.

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COURSE CONTENT:

1. Rational functions
2. Quadratic relations and conic sections
3. Counting methods and probability
4. Data analysis and statistics
5. Sequences and series
6. Trigonometric ratios and functions
7. Trigonometric graphs, identities, and equations