

Teaching and Learning

Advanced Math - Functions

Advanced Math (160347) is a non-STEM course taken after completing Algebra I, Geometry, and Algebra II.

This advanced-level post-Algebra II math course includes the skills needed to succeed in a non-STEM pathway at a 2- or 4-year university. This course will focus on multiple representations of functions through authentic and relevant real-life applications building on skills gained in Algebra II. Students will continue building statistical knowledge by exploring data through analysis of graphs, distributions, and statistical measures. This course explores topics using authentic and relevant applications to derive information from data in a real-world context.

Suggested Advanced Math Topics:

Functions

- Linear, Polynomial, Piecewise, Radical, Reciprocal, Exponential, and Logarithmic functions
 - Use numerical, graphical, analytical, and verbal representations
 - Understand, apply, and interpret transformations, key features, and symmetry of graphs

Probability

- Apply Counting Techniques: Multiplication Principle, Permutations, Combinations
- Identify Independent and Dependent Events
- Understand Set Theory and Logic
- Explore and Apply Unions of Events, Intersection of Events, Mutually Exclusive Events, Complementary Events
- Understand Conditional Probability

Statistics

- Explore and Collect Data
- Understand Data Collection Strategies and their Applications
- Apply Data Ethics
- Explore, Apply, and Interpret Measures of Central Tendency
- Explore, Apply, and Interpret measures of Dispersion: Range, Standard Deviation, Variance
- Explore, Apply, and Interpret Data Visualization: scatterplots, stem and leaf plots, box and whiskers plots, pie charts, histograms, bar graphs, line graphs, and circle graphs