

4th Course

Introduction:

A fourth year course can look different at each school. The standards listed are the (+) standards that would be appropriate for a variety of courses. These standards could be used as a basis for a precalculus course or could be selectively used to create a different 4th year course.

A precalculus course combines concepts of trigonometry, geometry, and algebra that are needed to prepare students for the study of calculus. This course is intended to strengthen students' conceptual understanding of problems and mathematical reasoning in solving problems. Facility with these topics is especially important for students who intend to study calculus, physics, other sciences, and engineering in college. The main topics in the precalculus course are complex numbers, rational functions, trigonometric functions and their inverses, inverse functions, vectors, matrices, parametric and polar equations, and conic sections. Students will continue their work with functions, using composition, inverses, exponents, trigonometry, and logarithms to build, model, and interpret functions along with careful examination of the domain and restrictions that apply.

Because the standards that comprise this course are (+) standards, students who enroll in precalculus should have met the college- and career-ready standards of the previous courses in an Integrated Pathway or Traditional Pathway. It is recommended that students complete precalculus before taking an Advanced Placement (AP) calculus course.

Since not all students will not need a precalculus course, school districts could develop a fourth year course utilizing the (+) standards that best meet the scholastic needs of their students.

The Mathematical Practice standards apply throughout the Fourth Year Course and together with the content standards prescribe that students experience math as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.