

# Module 133.0.1.4 :: Prerequisites :: Pre-Calculus Math

## Pre-Calculus Math

**From Wikipedia:** "In mathematics education , pre-calculus is a course, or a set of courses, that includes algebra and trigonometry at a level which is designed to prepare students for the study of calculus . Schools often distinguish between algebra and trigonometry as two separate parts of the coursework"

I have observed that, depending on where, and in what context, students have taken this course, that preparation varies. In particular, not all courses cover the basics of matrix operations. Be aware that this material is fundamental for CSC-133 and you will want to spend some time reviewing the videos linked below.

### Expected understanding of this material:

- trigonometric functions
- Cartesian coordinates
- points, lines and planes in space
- coordinate transformations
- conics,
- algebraic relations and functions
- polynomial equations
- inequalities
- matrix operations

### Reading Material

1. Start by reviewing the topics above in the pre-calc textbook that you used to learn this material.  
*(Yes, I'm aware that at least some of you may not have those texts any longer, which is unfortunate as it is generally easier to use the text book that you are familiar with, AND, pre-calculus math will come up over and over again in your career. No worries, we have you covered, see below)*
2. Review these elementary ideas
  - Cartesian (rectangular) coordinates
  - points , lines and planes in space
3. Review the topics in the provided OpenStax Pre-Calculus textbook.
  - algebraic relations and functions (Chapter 1)
  - polynomial equations (Chapter 3)
  - trigonometric functions (Chapters 5,6, and 7)
  - coordinate transformations (Chapter 8.3)
  - inequalities (Chapter 9)
  - matrix operations (Chapter 9)
  - conics (Chapter 10)

### Video Lecture

This topic is far too broad to cover in a few pre-requisite videos. However, the basics of matrices are significant in this course, so, if you're rusty, be sure to review this video by **James Hamblin** on the basics of Matrix Operations. James has a number of lectures on linear algebra and trigonometry on his page that you may find helpful.