What is Multivariable Calculus?

 π

BC Calculus deals with functions of one variable (y = f(x)) and multivariable calculus deals with functions of multiple variables (z = f(x,y)). As a class we will apply the things we learned in singlevariable calculus to analogous scenarios in three and higher dimensional spaces.

 π

Topics to be covered in Multivariable Calculus:

- Geometry in 3-D space, including vectors, planes, and quadratic surfaces. Parametric functions. Alternate coordinate systems.
- Functions of multiple variables, including various forms of their derivatives. Maximizing these functions. Vector-valued functions.
- Double integrals, triple integrals, integration using cylindrical and spherical coordinates. Changing variables to an arbitrary coordinate system.
- Line integrals and surface integrals of scalar functions
- Vector calculus including divergence and curl. integrals in vector fields. Green's, Gauss's, and Stoke's theorems.