Calculus 3

Course Description: Calculus of functions of several variables.

Course Objectives: Develop theoretical and practical skills for multivariable calculus. Specifically, students are expected to be able to demonstrate the following:

- Visualize geometry in three-dimensional space
- Find and apply vector and scalar equations of lines and planes in three-dimensional space
- Understand the calculus of vector-valued functions
- Solve unconstrained and constrained optimization problems
- Find and interpret partial derivatives, directional derivatives, and gradients
- Set up and evaluate double and triple integrals in rectangular, cylindrical, and spherical coordinates
- Set up and evaluate line and surface integrals in addition to applying Green's, Stokes', and Divergence Theorem