



<b>Division:</b>	Science/Mathematics	<b>Area:</b>	Mathematics
<b>Course Number:</b>	MATH 271	<b>Course Name:</b>	Calculus III
<b>Prerequisite:</b>	MATH 172		
<b>Corequisite:</b>	NONE		
<b>Hours Required:</b>	<b>Class:</b> 60	<b>Lab:</b> 0	<b>Credits:</b> 4 (four)

## Course Description/Purpose

Calculus III is the continuation of the principles of calculus applied to multivariable functions. The content of the course includes partial differentiation, multiple integration and vector analysis. The purpose of the course is to continue the analysis of functions with calculus to multivariable functions.

## Major Units

- Vectors
- Vector Functions
- Partial Derivatives
- Multiple Integrals
- Vector Calculus

## Educational/Course Outcomes

Student learning will be assessed by a variety of methods, including, but not limited to, quizzes and tests, journals, essays, papers, projects, laboratory/clinical exercises and examinations, presentations, simulations, portfolios, homework assignments, and instructor observations.

- Cognitive** Each student will be expected to *Identify/Recognize*. . .
- the application of vectors to lines, planes, and surfaces;
  - the application of partial differentiation to tangent planes, extrema, and Lagrange multipliers;
  - the application of multiple integration to centers of mass and surface area.

- Performance** Each student will be expected to *Demonstrate/Practice*. . .
- represent equations for lines, planes, and surfaces with vectors;
  - determine partial and total derivatives of multivariable functions;
  - integrate double and triple integrals in rectangular and other coordinate systems;
  - analyze and identify quadratic surfaces;
  - calculate line integrals.