Salisbury University Department of Mathematical Sciences

MATH 310 : Calculus III
Syllabus (Tentative)

Description: Arc length, indeterminate forms, Euclidean spaces, functions of several variables, partial di erentiation, multiple integrals. 4 Hours Credit: Meets four hours per week.

Prerequisites: C or better in MATH 202.

Intended Audience: Mathematics and physics majors, students interested in the dual degree engineering transfer program, and students seeking continued and demanding study in mathematics beyond single variable calculus.

Objective: To further understand the mathematics that underlies modern science, with emphasis on applications, approximations, and the role of proof. To develop and understand the relationships among verbal, algebraic, and graphical representations of two- and three- dimensional objects. To understand how single-variable calculus generalizes to higher dimensions.

Textbooks: *Calculus: Early Transcendentals*, 9th Edition, by James Stewart, Cengage Learning, 2016.

Technology: Subscription to WebAssign is required. Use of Mathematica (available in campus labs and free for download for students) incorporated at the discretion of the instructor.

Topic	Weeks
Vectors and the Geometry of Space (Chapter 12)	2
Three-dimensional coordinate systems and vectors; dot and cross products; equations of lines, planes, spheres, and other common surfaces in space.	
Vector Functions (Chapter 13)	2
Vector functions and space curves; calculus of vector functions; arc length and curvature; velocity, acceleration and motion in space.	
Multivariable Functions and Partial Derivatives (Chapter 14)	3
Functions of several variables; limits, continuity and di erentiability; tangent planes and linear	

- **Writing Across the Curriculum:** Students will be expected to communicate mathematics and mathematical