

**Math 273 Course Syllabus  
Sandhills Community College  
Department of Mathematics**

Course:	MAT 273 Calculus III
Credit Hours:	4
Lecture Hours:	5 per week
Lab Hours:	0 per week
Prerequisite:	Math 272 with a grade of C or better
Corequisite:	None
Course Description:	This course covers the calculus of several variables and is the third calculus course in a three-course sequence. Topics include functions of several variables, partial derivatives, multiple integrals, solid analytical geometry, vector-valued functions, and line and surface integrals. Upon completion, students should be able to solve problems involving vectors and functions of several variables. <b>This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.</b>
Text: (Subject to change)	<b>Calculus</b> , 8th edition by Larson, Hostetler, and Edwards, Houghton Mifflin Company, Boston and New York, 2006, ISBN: 0-618-50298-X
Goals and Objectives:	<p>The student should be able to model and solve application problems while learning to:</p> <ol style="list-style-type: none"> <li>1. Find the domain of and sketch the curve represented by a vector-valued function and describe the graph of the function</li> <li>2. Find the derivative or integral of a vector-valued function</li> <li>3. When given a position function <math>r</math>, find the velocity, speed, and acceleration of an object</li> <li>4. Find the arc length of a space curve</li> <li>5. Give an example of a function of several variables and describe in general the graph of the function</li> <li>6. Find partial derivatives of a function of several variables</li> <li>7. Apply the appropriate chain rule to a function of several variables</li> <li>8. Work a problem involving a directional derivative or gradient for a function of several variables</li> <li>9. Examine a function of several variables for relative extrema and saddle points</li> <li>10. Evaluate a double integral</li> <li>11. For a double integral, sketch the region of integration</li> <li>12. Use a double integral to evaluate a volume</li> <li>13. Work with cylindrical or spherical coordinates</li> <li>14. Set up and evaluate a triple integral</li> <li>15. Determine whether a vector field is conservative</li> <li>16. Evaluate a line integral</li> </ol>

General Education:	Students who are successful in this course will improve in the following general education areas: reading, oral communication, mathematical skills, problem solving, critical thinking, and cooperating with others.
Course Requirements:	A graphing calculator is required for this course in addition to the textbook.
Grading Scale:	Grading scale: 90 - 100 = A 80 - 89 = B 70 - 79 = C 60 - 69 = D Below 60 = F