

**Math 272 Course Syllabus
Sandhills Community College
Department of Mathematics**

Course:	MAT 272 Calculus II
Credit Hours:	4
Lecture Hours:	5 per week
Lab Hours:	0 per week
Prerequisite:	Math 271 with a grade of C or better
Corequisite:	None
Course Description:	This course provides a rigorous treatment of integration and is the second calculus course in a three-course sequence. Topics include applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to use integration and approximation techniques to solve application problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.
Text: (Subject to change)	<u>Calculus</u> , 8th edition. by Larson, Hostetler, and Edwards, Houghton Mifflin Company, Boston and New York, 2006, ISBN: 0-618-50298-X
Goals and Objectives:	The student should be able to model and solve application problems, using technology when appropriate, while learning to: <ol style="list-style-type: none"> 1. Apply differentiation and integration formulas/techniques to the inverse trigonometric functions. 2. Find the area between two curves. 3. Find volumes of solids of revolution using disc, washer, and shell methods. 4. Find arc length and surface area of revolution. 5. Find the work done by stretching or compressing a spring. 6. Evaluate integrals using various techniques of integration. 7. Expand a transcendental function using a Taylor or Maclaurin Series. 8. Identify, graph, and use the characteristics of conic sections. 9. Find the slope, arc length, and surface area of curves defined by parametric and by polar equations. 10. Perform operations on vectors in 2-space and 3-space. 11. Find the dot product, cross product, and components and projections of vectors. 12. Find the equations of lines and planes in 3-space.
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. Labs assignments using Maple software will be a part of this course.
Grading Scale:	Grading scale: 90 - 100 = A 80 - 89 = B 70 - 79 = C 60 - 69 = D Below 60 = F A grade of C (70%) is required for any math course having MAT 271 as a prerequisite.