

**Math 271 Course Syllabus  
Sandhills Community College  
Department of Mathematics**

Course:	MAT 271 Calculus I
Credit Hours:	4
Lecture Hours:	5 per week
Lab Hours:	0 per week
Prerequisite:	MAT 172 or MAT 175 with a grade of C or higher
Corequisite:	None
Course Description:	This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications. Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions. <b>This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/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:	The student should be able to model and solve application problems, using technology when appropriate, while learning to: <ol style="list-style-type: none"> <li>1. Evaluate limits graphically, numerically, and analytically.</li> <li>2. Determine continuity of a function</li> <li>3. Find derivatives using the limits of difference quotients.</li> <li>4. Find derivatives using derivative formulas</li> <li>5. Find instantaneous rates of change by using derivatives.</li> <li>6. Find higher order derivatives</li> <li>7. Solve related rates problems using implicit differentiation.</li> <li>8. Apply Rolle's Theorem and the Mean Value Theorem to a function.</li> <li>9. Use derivatives to find relative extrema and points of inflection of a function and to analyze graphs.</li> <li>10. Solve maximum and minimum problems.</li> <li>11. Find indefinite and definite integrals.</li> <li>12. Apply differentiation and integration formulas/techniques to exponential and logarithmic functions.</li> <li>13. Use exponential and logarithmic functions to solve problems involving growth and decay.</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 recommended, but not required, for this course in addition to the text.
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.