

## COURSE SYLLABUS

**Text:** *University Calculus* by Hass, Weir, and Thomas, ISBN: 0-321-35014-6.

**ACE Outcome 3:** This course satisfies ACE Outcome 3. You will apply mathematical reasoning and computations to draw conclusions, solve problems, and learn to check to see if your answer is reasonable. Your instructor will provide examples, you will discuss them in class, and you will practice with numerous homework problems. The exams will test how well you have mastered the material.

**Math Placement:** Students who take Math 106 must satisfy the requirements of the Math Placement Policy. You satisfy the policy if you satisfy one of the following conditions:

1. You have passed UNL's Math 102 or 103 (or the equivalent course at UNO or UNK) with a grade of C, P or better.
2. You have passed the prerequisite courses in high school or at another college and have a qualifying score on the Math Placement Exam dated after October 2008. The Math Placement Exam will be given online at the College Testing Center (Burnett 127). For more details, check the department web site: (<http://www.math.unl.edu/resources/undergraduate/mpe/>).
3. You have a grade of D, D+, or C- in this course from UNL, UNO, or UNK.

**Calculators:** A graphing calculator can be useful for this course, and the TI-83, TI-84 and TI-86 are recommended. However, ALL CALCULATORS that have a built-in computer algebra system (CAS) **will not be permitted** during any of the exams or quizzes. Examples of CAS calculators include the TI-89, TI-92, TI-Nspire, HP-40, HP-41, Casio ALGEBRA FX 2.0, Casio ClassPad 300, and Casio ClassPad 330.

**Scheduling:** A tentative schedule of assignments and exams is included in this syllabus. These details are presented as a guide. Your instructor may change the dates for each assignment and/or exam, modify the exercise list, and/or add assignments. It is your responsibility to keep track of the course details and schedule for your section.

**Reading & Exercises:** You are expected to read the appropriate sections of the text BEFORE coming to the class meeting in which the topic is scheduled. Also, you are expected to work the assigned exercises after the corresponding material is presented in class, and BEFORE the next class meeting (lecture or recitation).

**Project and Other Assignments:** This course will include a group project. Your instructor will decide on the specific requirements for your project report. There may also be other graded assignments (such as weekly quizzes) given at the discretion of your instructor.

**Gateway Exam:** This exam consists of 10 questions in which you are asked to find the derivative without using calculators, notes, or tables. You must get at least 8 questions completely right to pass with full credit. If you are not satisfied with your performance on the Gateway Exam when it is first administered, you can go to the [Mathlab](#) (18 Avery Hall) or the [Arts and Sciences College Testing Center](#) (Burnett 127) for a retake (picture ID required). The final **deadline** for passing the Gateway is **Friday November 6, 2009**.

**Math Resource Center:** Students in Math 106 are encouraged to use the Math Resource Center in Avery 13B if they have questions related to this course, or as a place to meet and discuss group projects. Hours for the MRC are MTWR 12:30–8:30 pm, F 12:30–2:30 pm, and Su 1:00–5:00pm.

**Special Dates:**

- September 4, 2009 (Friday): last day to withdraw from this course and not have it appear on your transcript.
- October 16, 2009 (Friday): last day to change your grade option to or from Pass/No Pass.
- November 13, 2009 (Friday): last day to drop this course and receive a grade of W.  
(No permission required.) After this date you cannot drop.

**Final Exam Policy:** Students are expected to arrange their personal and work schedule to allow them to take the final exam at the scheduled time. Students who have conflicting exam schedules may be allowed to take an alternate final, which is always given after the regularly scheduled final. No student will be allowed to take the final exam early. No cell phones or other devices with a wireless capability will be allowed during any exam. The final exam for this course is **Wednesday, December 16, 6:00-8:00 pm, (Room To Be Announced)**

## Tentative Schedule

Date		Section and Topic	Exercises
August	24	M 1.1-1.4 Introduction to calculus	P.11: 1, 4, 15, 17, 20, 45, 46. P.20: 11, 20, 39. & P.28: 7, 8, 13, 40, 48. & P.35: 7, 20, 22
	26	W 2.1 Rates of change & tangents	P61: 1, 2, 3, 5, 7, 9, 11, 10, 13, 14
	28	F 2.2 Limits	P71: 1, 3, 5, 7, 9, 18, 24, 25, 28, 33, 39, 43, 81, 82
September	31	M 2.4 Limits & limits at infinity	P94: 1, 2, 3, 7, 9, 15, 23, 39, 51, 59, 73
	2	W 2.5 Infinite limits & vertical asymptotes	P102: 1, 3, 5, 7, 9, 11, 17, 21, 27, 29, 31, 33, 37
	4	F 2.6 Continuity	P113: 1-6, 11-27 (odd), 33, 39, 57
<b>Last day to drop without a W</b>			
	7	M <b>Labor Day Holiday</b>	
	9	W 2.7 Tangents & derivative at a point	P118: 1, 3, 4, 5, 7, 8, 11, 13, 21, 23, 27, 29
	11	F 3.1 The derivative as a function	P132: 1, 3, 5, 7, 9, 11, 13, 17
	14	M 3.2 Differentiation rules	P132: 27-30, 33, 43; P144: 1, 3, 5, 7, 11
	16	W 3.2 Differentiation rules	P144: 13, 15, 17, 19, 21, 24, 25, 27, 33, 37, 39, 43, 45
	18	F 3.3 The derivative as a rate of change	P153: 1, 3, 7, 15, 18, 25
	21	M 3.4 Derivatives of trig. functions	P162: 1, 3, 5, 7, 9, 13, 17, 23, 31
	23	W 3.5 Chain rule and parametric curves	P173: 1, 3, 5, 9, 11, 17-33 (odd)
	25	F 3.5 Chain rule and parametric curves	P173: 35-41 (odd), 67, 68, 81, 83, 85, 89, 101
	28	M 3.6 Implicit differentiation	P181: 1, 3, 5, 7, 11, 19, 21, 25, 31, 35, 37
October	30	W Review for Exam 1	
	1	R <b>EXAM 1</b>	
	2	F 1.5 Inverse functions and logarithms	P47: 1-6, 7, 13, 15, 17, 25, 41, 45
	5	M 3.7 Derivatives of inverse functions	P192: 11-27 (odd), 41, 43, 51, 55, 87, 45, 48, 49, 51, 56
	7	W 3.8 Inverse trig functions & logarithms	P199: 1, 3, 7, 13, 21, 23, 29, 33, 41
	9	F 3.9 Related rates	P205: 1, 3, 7, 10, 11, 13, 15, 17, 18, 21, 22, 23
	12	M 3.10 Linearization & differentials	P218: 1, 3, 5, 19, 21, 27, 31, 33, 41
	14	W 4.1 Extrema	P243: 1, 3, 5, 7-10, 15, 17, 21, 31, 35, 39, 45, 51
	15	R <b>Paper Gateway Exam</b>	
	16	F 4.2 The Mean Value Theorem	P251: 1, 2, 3, 5, 10, 15, 27, 29, 30
<b>Last day to change to or from Pass/No Pass</b>			
	19-20	<b>Fall Semester Break</b>	
	21	W 4.3 Monotonic functions & first deriv. test	P258: 1, 3, 5, 9, 13, 17, 25, 39, 47, 49
	22	R <b>Project Assigned</b>	
	23	F 4.4 Concavity & curve sketching	P267: 1, 2, 5, 9, 11, 15, 17, 25
	26	M 4.7 Newton's method	P294: 1, 3, 19; P267: 27, 29, 47
	28	W Review for Exam 2	
	29	R <b>EXAM 2</b>	
	30	F 4.5 Applied optimization	P276: 2, 3, 4, 5, 7, 8, 9, 11
November	2	M 4.5 Applied optimization	P276: 12, 14, 20, 33
	4	W 4.6 L'Hôpital's Rule	P289: 1, 5, 7, 9, 13, 15, 19, 23, 25, 33, 35, 45, 57, 61, 63
	6	F 4.8 Antiderivatives	P302: 1-55 (odd—except 17, 47, 49); 71, 75, 83
<b>Deadline for passing the Gateway Exam.</b>			
	9	M 5.2 Sigma notation and limits of sums	P331: 1, 5, 7, 8, 11, 15, 17, 20, 23, 29
	11	W 5.1 Riemann Sums	P322: 1b, 3b, 4a, 7, 11, 19
	13	F 5.3 The definite integral	P341: 1, 3, 9, 11, 15, 17, 19, 43, 47
<b>Last day to drop with a W</b>			
	16	M 5.4 Fundamental Theorem of Calculus	P351: 1-31 (odd), 35, 41, 43, 51, 57
	18	W 5.5 Indefinite integrals & substitution	P358: 1, 5, 7, 9, 13, 17, 21, 25, 29, 33, 37, 59
	19	R <b>PROJECT DUE</b>	
	20	F 5.6 Substitution & area between curves	P366: 1, 3, 5, 9, 11, 27, 31, 39, 41, 47, 51, 57, 63, 65, 75
	23	M 6.1 Volumes by slicing	P399: 1, 3, 5, 19, 21, 29, 49
	25-29	<b>Thanksgiving Holiday</b>	
December	30	M 6.2 Volumes by cylindrical shells	P406: 1, 3, 5, 7, 11, 15, 25, 27
	2	W Review for Exam 3	
	3	R <b>EXAM 3</b>	
	4	F 6.3 Lengths of plane curves	P413: 1, 3, 5, 9, 15
	7	M Catch up/Review	
	9	W Catch up/Review	
	11	F Catch up/Review	
	16	W <b>FINAL EXAM, 6pm-8pm</b>	

**Departmental grading appeals policy:** Students who believe their academic evaluation has been prejudiced or capricious have recourse for appeals to (in order) the instructor, the departmental chair, the departmental appeals committee, and the college appeals committee.