Text. Calculus: Single and Multivariable, 5th Edition, Hughes-Hallett, *et al.*, ISBN: 978-1-118-14155-7

ACE Outcome 3. This course satisfies ACE Outcome 3: "Use mathematical, computational, statistical, or formal reasoning (including reasoning based on principles of logic) to solve problems, draw inferences, and determine reasonableness." 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've mastered the material. The final exam will be the primary means of assessing your achievement of ACE Outcome 3.

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:

a) 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.
b) 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 May 2012. The Math Placement Exam will be given online at the College Testing Center (Burnett 127). For more details ask at the math office (Avery 203).
c) You have a grade of D−, D, D+, or C− in this course from UNL, UNO, or UNK.

Calculators. A graphing calculator is a useful tool for this course, and the TI-83, TI-84 and TI-86 are recommended. However, no calculator having a built-in computer algebra system (CAS) will 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 330.

Mathematics Resource Center. Students in Math 106 are encouraged to use the Mathematics Resource Center (MRC) in Avery 13B if they have questions related to this course, or as a place to meet and discuss group projects. The hours for the MRC are MTWR 12:30–8:30 pm, Fri 12:30–2:30 pm, and Sun 1:00-5:00 pm.

Scheduling. A tentative schedule is included in this syllabus. These details are presented as a guide. Your instructor may change the dates for assignments and/or exams.

Reading. Please do the reading from the sections before coming to class each day. Your instructor will be planning class activities assuming you have done the reading. Math 106 covers a lot of material, so the pace is necessarily quite fast.

Assignments. The syllabus lists homework questions for each class day. Your instructor will tell you what homework will be collected and how it will be graded. You are strongly encouraged to complete these homework assignments in order to increase your understanding of the material. This course will include a group project. Your instructor will decide on the specific requirements for your project report.

Gateway Exam. This exam will cover techniques of differentiation. To get any credit on the Gateway Exam you must demonstrate a high level of proficiency and accuracy. The exam will consist of 10 questions. Of these you must get at least 8 completely correct to pass the exam. No partial credit will be given. You will not be allowed to use calculators or notes. If you do not pass the Gateway exam when it is first administered (Thursday February 21st) you must go to the College Testing Center for a computer administered retake. (A picture ID will be required.) You may attempt the electronic version of the Gateway Exam at most once a day. The deadline for passing the Gateway Exam is Friday March 8th.

Final Exam. Students are expected to arrange their personal and work schedule to allow them to take the exam at the scheduled time. Students who have conflicting exam schedules may be allowed to take an alternative final, which is always given after the regularly scheduled final. No student will be allowed to take the final exam early. **The final exam is on Tuesday, April 30th, from 6-8 pm.** The room will be announced during the final week of class.

Course Evaluation.: The Department of Mathematics Course Evaluation Form will be available through your Blackboard account during the last two weeks of class. You'll get an email when the form becomes available. Evaluations are anonymous and instructors do not see any of the responses until after final grades have been submitted. Evaluations are important—the department uses evaluations to improve instruction. Please complete the evaluation and take the time to do so thoughtfully.

Prerequisites. Students who take Math 106 must have passed Math 106 with a grade of P or C or better. Any students who do not meet this requirement will be dropped from the course.

Schedule. The following schedule of topics is approximate.

Date	Section		Homework Questions
Jan 7 M	1.1	Functions and Change	1, 4, 5, 9, 10, 13, 25, 26
9 W	1.2	Exponential Functions	5, 8, 9, 13, 17, 22, 23
	1.3	New Functions from Old	1, 4, 8, 9, 11, 13, 15, 19, 25, 28, 32, 33, 55, 56
11 F	1.4	Logarithmic Functions	1, 4, 5, 7, 10, 15, 18, 21, 22, 25, 30, 31, 40, 42, 46
Jan 14 M	1.5	Trigonometric Functions	1, 3, 5, 13, 18, 19, 24, 29, 30, 32
16 W	1.7	Introduction to Continuity	1, 3, 5, 8, 9, 11, 12, 20, 22
18 F	1.8	Limits	1, 3, 11, 13, 17, 18, 36, 37, 39, 47, 48, 51
January 18 is the last day to withdraw without the course appearing on your transcript.			
January 21: Martin Luther King Day			
Jan 23 W	2.1	How Do We Measure Speed?	2, 3, 5, 7, 11, 14, 25, 26
25 F	2.2	The Derivative at a Point	1, 4, 7, 9, 12, 13, 14, 16, 32, 35, 41, 43

Jan 28 M	2.3	The Derivative Function	1, 3, 4, 5, 7, 13, 14, 15, 16, 45
	2.4	Interpretations	1, 3, 6, 14, 16, 24
30 W	2.5, 2.6	The Second Derivative & Differentiability	§2.5: 1, 3, 7, 9, 10, 17, 18 §2.6: 1–4, 8, 9
Feb 1 F	3.1	Powers	2–6, 8, 11, 13, 27, 30, 34, 43, 45
	3.2	The Exponential Function	1, 2, 5, 8, 10, 16, 17, 18, 22, 32, 41, 47
Feb 4 M	3.3	Product and Quotient Rules	1, 3–7, 10, 12, 17, 21 , 29, 31, 32, 45, 48, 51
6 W	3.4	The Chain Rule	1–8, 9, 10, 14, 15, 19, 20, 22, 27, 32, 35, 37, 45 51, 52, 59, 68, 85
8 F	3.5	Trigonometric Functions	2–9, 10, 11, 15, 17, 20, 25, 27, 33, 37, 39, 42
Feb 11 M	3.6	The Chain Rule and Inverse Functions	1–7, 8, 11, 13, 14–18, 25, 26, 27, 30, 32, 51–53, 55
13 W	Review		
14 R	**Exam 1**		
15 F	3.7	Implicit Differentiation	2, 3, 7, 10, 11, 13, 14, 20, 21, 25, 28
Feb 18 M	3.8	Hyperbolic Functions	1–8, 31
20 W	3.10	Theorems on Differentiable Functions	1–9, 12, 13, 14, 15, 19, 21
21 R	**Gateway Exam**		
22 F	3.9	Linear Approximation	1–4, 6, 13, 16, 23, 32
Feb 25 M	4.1	Local Extrema	1, 3, 5, 7, 8, 9, 14, 15, 17, 20, 23, 28–31
27 W	4.2	Optimization	5, 7, 8, 9, 10, 11, 13, 15, 17–20, 25, 33
Mar 1 F	4.3	Families of Functions	1, 3, 5, 7, 9, 10, 13, 24, 25, 35
March 1 is the last day to change your grade option to or from Pass/No Pass.			
Mar 4 M	4.4	Optimization & Geometry	2, 3, 5, 11, 13, 14, 15, 17, 20, 23
5 T	**Project Assigned**		
6 W	4.4	Optimization & Geometry	25, 27, 29, 32, 37, 41, 46, 48
8 F	Catch up		
Mar 11 M	Review		
12 T	**Exam 2**		
13 W	4.6	Related Rates	4, 5, 9, 12, 29, 30, 31, 32, 35, 36, 39, 45
15 F	4.7	L'Hôpital's Rule	1, 3, 5, 7, 16, 18, 19, 21, 22, 25, 28, 29, 37, 41, 49
March 15 is the last day to take the Gateway Exam.			
March 17-March 24: Spring Break			
Mar 25 M	4.8	Parametric Equations	1, 2, 5, 9, 11, 13, 16, 17, 18, 21, 23, 25, 26, 27, 31, 35
27 W	5.1	Distance Traveled from Velocity	1, 3, 7, 8, 12, 14, 15, 17, 18, 19, 23
29 F	5.2	The Definite Integral	1, 3, 5, 6, 7, 10, 25, 30, 31, 32, 33, 35
Apr 1 M	5.3	Fundamental Theorem of Calculus–Part 1	1, 2, 4, 5, 9, 10, 13, 30, 31, 36
3 W	5.4	Theorems about Definite Integrals	2, 3, 4, 5, 12–16, 19, 21–25, 28, 29, 31, 35, 37, 44–47
5 F	6.1	Antiderivatives Graphically and Numerically	1, 2, 5, 7, 10, 11, 14, 15, 16
April 5 is the last day you can withdraw from the class.			
Apr 8 M	6.2	Antiderivatives Analytically	1–15 (odd), 22, 25, 28, 31, 35, 40–44 50, 51, 54, 59 61, 62, 65, 66, 69, 73, 79
9 T	**Project Due**		
10 W	6.4	Fundamental Theorem of Calculus–Part 2	1, 4, 5, 6, 10, 13, 20, 23, 25, 28, 30, 35, 37
12 F	7.1	Integration by Substitution	1, 2, 3, 6, 7, 9, 11, 15, 25, 27–31, 33, 40, 43, 57–62
Apr 15 M	Review		
16 T	**Exam 3**		
17 W	7.1	Integration by Substitution	64, 74, 75, 78, 79, 84, 85, 88, 89, 99
19 F	Catch up		
Apr 22 M	Catch up		
24 W	Review		
26 F	Review		

Students With Disabilities. Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities office, 132 Canfield Administration, 472-3787 voice or TTY, `http://www.unl.edu/ssd`.

Department Grading Policy. Students who believe their academic evaluation has been prejudiced or capricious have recourse for appeals to (in order) the instructor, the department vice chair, the department chair, the departmental appeals committee, and the college appeals committee.