Math 106, Calculus I, University of Nebraska-Lincoln, Fall 2015

Text *Calculus: Single and Multivariable, Sixth Edition* Hughes-Hallett, *et al.*

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.

Placement: You may take Math 106 if you satisfy one of the following conditions:

1. You have passed UNL's Math 102 or 103 with a grade of C, P or better.
2. You have a prior grade of D, D+, or C- in Math 106 from UNL.
3. 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 March 2015. The Math Placement Exam is given at the College Testing Center (Burnett 127); see http://www.math.unl.edu/resources/undergraduate/mpe/.

Calculators: A graphing calculator can be useful for this course, and the TI-83, TI-84 and TI-86 are recommended. However, calculators that have a built-in computer algebra system (CAS), such as the TI-89, TI-92, TI-Nspire, HP-40, HP-41, Casio ALGEBRA FX 2.0, Casio ClassPad 300, and Casio ClassPad 330, **will not be permitted** during the final exam. Your instructor will determine the calculator policy for hour exams.

Cell Phones: As a courtesy to others, please turn off your cell phones and similar devices when you come to class.

Scheduling: A tentative schedule is included in this syllabus, as a guide. Your instructor will notify you of any changes.

Reading, Exercises, and Assignments: Your instructor will be planning class activities assuming you have done previously assigned reading and exercises. Keeping up is an essential prerequisite for getting the most out of class time. There may be graded projects, computer assignments, paper assignments, and quizzes, at the discretion of your instructor.

Mathematics Resource Center: You are encouraged to visit with your instructors when you have questions about the material or course and to use the Mathematics Resource Center (MRC) in Avery 13 as a meeting place for the course and a resource for assistance. 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.

Calculus Readiness Activity: There is a mastery exam given on paper on **Thursday, August 27** in recitation. This exam covers prerequisite material essential to your success in the course. There are 15 questions and if you have a score of 13 or better, you get full points for the CRA. If you do not pass on paper, then you can take it again online at the Arts and Sciences Testing Center (Burnett 127; student ID required) up to once per day until **Wednesday, September 9**.

Gateway Exam: This exam consists of 8 questions in which you are asked to find the derivative without using calculators, notes, or tables. You must get at least 7 questions completely right to pass, with no partial credit and no points awarded for less than a passing mark. You may repeat the exam up to once a day during the exam period. The Gateway exam will be given once in class on **October 1**. Retakes will be given in the College Testing Center (Burnett 127, student ID required) from **October 2** through **October 23**.

Exams: Mid-term exams will be given on **September 24**, **October 29**, and **between November 30 and December 3**, all from 6pm to 7:30pm, and a Final Exam will be given on **Wednesday, December 16** from 6pm to 8pm, at locations TBA. (The precise date of Exam 3 will be announced as soon as it is scheduled, which will be before Labor Day.) You are expected to take these exams at the scheduled time, with exceptions made for students who have a conflict with another scheduled exam or who have three or more finals on one day. Makeups should be arranged with Lori Mueller in Avery 203 as soon as possible. Under no circumstances will exams be given early. **You are not allowed to have on your person during exams any device that can access the internet or communicate in any way. Cellphones, smart watches, etc. should be put away in backpacks/purses.**

Disability Accommodation: The University of Nebraska-Lincoln is committed to providing 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. Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

Department Grading Appeal 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.

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.

Date		**Section**	**Topic(s)**	**Exercises**
Aug 24	M	1.2,4	Exponentials and Logs	p17: 7, 9, 13, 16, 32, 41; p33: 7, 10, 21, 25, 30, 31, 39, 42, 47, 54
Aug 26	W	1.5,3	Trig & PreCalc	p42: 1, 15, 20 , 29, 31, 42, 43; p26: 1, 5, 11, 13, 18, 23, 28, 33, 57
			The CRA will be given in recitation on August 27.	
Aug 28	F	1.7	Intro to Continuity	p56: 1, 3, 5, 8, 9, 11, 12, 20, 33, 35, 37
Aug 31	M	1.8	Limits	p64: 1, 3, 29, 31, 35, 36, 54, 55, 57, 65
Sept 2	W	2.1	Measuring Speed	p80: 2, 3, 5, 7, 15, 17, 18, 20, 24, 25
Sept 4	F	2.2	Derivative at a Point	p87: 1, 2, 8, 11, 13, 15, 17, 18, 20, 21, 24, 29, 35, 37, 41, 45
			September 4 is the last day to drop the course with no transcript record.	
			September 7 : Labor Day	
Sept 9	W	2.3, 4	Derivative Function	p95: 1, 3, 4, 5, 19, 28, 36, 44, 47; p101: 1, 3, 10, 14, 15, 27
			September 9 is the last day to take the CRA.	
Sept 11	F	2.5, 6	Second Derivative	p108: 2, 4, 9, 10, 11, 19, 20, 26, 28; p114: 1–4, 8, 9, 16
Sept 14	M	3.1,2,5	Derivative Formulas	p129: 4–5, 32, 42, 46, 58, 61, 73; p135: 1, 5, 21, 43, 44; p154: 63
Sept 16	W	3.3	Product Rule	p139: 1, 3, 6, 8, 31; p153: 3, 12, 25–27, 36
Sept 18	F	3.3	Quotient Rule	p139: 10, 15, 19, 27, 32, 35, 39, 45, 52; p153: 42, 44

Sept 21	M	3.4	The Chain Rule	p146: 3, 5, 10, 25, 34, 37, 51, 57, 59, 61; p153: 11, 16, 17, 24, 33
Sept 23	W		Review for Exam	
Sept 24	R		**EXAM 1**	**6 PM - 7:30 PM, Location TBA**
Sept 25	F	3.6	Inverse Functions	p159: 3–10, 17–20, 24, 29, 33, 38–40, 44, 47, 50, 52, 64; p153: 45
Sept 28	M		Review for Gateway Exam	
Sept 30	W	3.7	Implicit Differentiation	p164: 1, 5, 10, 13, 14, 17, 23, 24, 26, 28, 29, 31, 35, 41
			The Gateway Exam will be given in recitation on October 1.	
Oct 2	F	3.9	Linear Approximation	p172: 1-4, 7, 12, 16, 17, 25, 26, 40, 42
Oct 5	M	3.8	Hyperbolic Functions	p167: 1–8, 23, 24, 29, 33;
Oct 7	W	3.10	Mean Value Theorem	p178: 1–9, 12–15, 19, 20
Oct 9	F	4.1	Local Extrema	p192: 1, 3, 10–14, 16–18, 21, 26–28, 33, 35, 37, 45
Oct 12	M	4.2	Global Extrema	p202: 1, 4, 6–8, 11, 13, 15, 18, 26, 31, 37
Oct 14	W	4.3	Optimization	p210: 1–4, 7, 9, 11, 12, 18, 20,
Oct 16	F	4.3	Optimization	p210: 29, 34, 39, 41, 45, 46, 48
			October 16 is the last day to change your grade option to or from Pass/No Pass.	
			October 19-20 : Fall Break	
Oct 21	W	4.4	Families of Functions	p220: 1, 3, 5, 9–11, 13, 14, 30, 32, 43, 49
Oct 23	F	4.6	Related Rates	p237: 1, 3, 22, 24, 26–28, 33, 37, 44, 45, 50
			October 23 is the last day to take the Gateway Exam.	
Oct 26	M	4.7	L'Hôpital's Rule	p247: 1–8, 16, 21, 25, 27, 28, 30–32, 34, 38, 45, 46, 49, 56
Oct 28	W		Review for Exam	
Oct 29	R		**EXAM 2**	**6 PM - 7:30 PM, Location TBA**
Oct 30	F	4.8	Parametric Equations	p256: 1, 2, 12, 16, 18, 19, 27, 29, 38, 44
Nov 2	M	4.8	Parametric Equations	p256: 5–8, 37, 45–47, 49, 50
Nov 4	W	5.1	Distance Traveled	p277: 1–4, 9, 12, 13, 15, 17–19, 26, 27
Nov 6	F	5.2	The Definite Integral	p286: 1, 3, 4, 11 14, 18, 19, 29–31, 35, 39, 41, 43
Nov 9	M	5.3	Fundamental Theorem I	p294: 1, 2, 4, 5, 9, 12, 15, 19, 21, 30, 31, 38
Nov 11	W	5.4	Properties of Definite Integrals	p305: 1–7, 10–13, 18, 21, 27, 30, 31, 38–43
Nov 13	F	6.1	Antiderivatives from Graphs	p323: 1, 3–5, 14, 16, 17, 20, 22, 24, 25, 30
			November 13 is the last day you can withdraw from the course.	
Nov 16	M	6.2	Antiderivatives from Formulas	p330: 1-9 (odd), 20, 22, 31, 38, 45, 54, 58, 62, 66, 69, 74
Nov 18	W	6.3	Differential Equations	p337: 1–3, 14, 16, 19, 23, 24, 33
Nov 20	F	6.4	Fundamental Theorem II	p342: 1, 4, 7–12, 14, 17, 20, 23, 25, 26, 35, 36
Nov 23	M	7.1	Substitution	p360: 1, 2, 4, 6, 7, 9, 11, 15, 25, 27–31, 36, 42, 46, 59–64
			November 25-27 : Thanksgiving Break	
			EXAM 3 will be given from 6 to 7:30 PM one evening between Nov. 30 and Dec. 3	
Nov 30	M	7.1	Substitution	p360: 66, 69, 70, 77, 80, 81, 85, 92, 114, 125, 128, 133, 142
Dec 2	W		Review for Exam	
Dec 4	F		Review for Final Exam	
Dec 7–11			Review for Final Exam	
Dec 16	W		**FINAL**	**6 PM - 8 PM, Location TBA**