

## COURSE SYLLABUS

### MATH 107H: Honors Calculus II

UNL, Fall 2016, Section: 002, CRN: 4388

Dr. Adam Larios

**Lecture:** MTWF, 9:30 am–10:20 am, Oldfather Hall 208 **Email:** [alarios@unl.edu](mailto:alarios@unl.edu)

**Office:** Avery Hall 305

**Math Dept. Phone:** (402) 472-7250

**Office Hours:** M,W,F, 1:30 pm–2:20 pm, or by appointment

**Text:** *Calculus: Single and Multivariable*, 6th ed. by Hughes-Hallet, et al., ISBN: 978-0470-88861-2.

**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.

**Prerequisites:** Students who take Math 107H must have passed Math 106 or an equivalent course with a grade of P or C or better. Students who are new to UNL must also pass a readiness test for Math 107H. Any students who do not meet this requirement will be dropped from the course.

**Advanced Placement Program:** If this is the first college mathematics course that you have attempted, then you may be eligible for 5 hours of free credit for Math 106, provided you get a grade of C, P or better in Math 107H this semester. To be considered for this credit, you should visit the Arts & Sciences Advising Center in 107 Oldfather to make a request by the end of the third week of classes, i.e., by Friday, September 9.

**Calculators, Phones, etc.:** A graphing calculator may be useful for this course, and the TI-83, TI-84 and TI-86 are standard devices, although there are many phone or computer applications that are equivalent or better. No calculators are allowed during quizzes or exams. **No phones or any devices capable of wireless communication** including smart-watches are permitted at any time. As a courtesy to others please silence your phones when you come to class.

**Scheduling:** A tentative schedule of assignments and exams is included in this syllabus. Your instructor may change the order of the topics, modify the list of exercises and introduce new assignments. It is your responsibility to keep track of the course details and the schedule for your section.

**Attendance:** Daily attendance for class lectures is expected and is extremely important. While attendance is not recorded, missing even one class will put you behind. Note that there is a strong correlation between class absences and poor grades. You are responsible for all material and announcements in class regardless of whether or not you attended. **You are also responsible for making arrangements with another classmate to find out what you missed. You should not ask me to go over material you missed (due to tardiness or absences) during office hours or over email.**

**Reading and Homework:** You are expected to read the appropriate sections of the text BEFORE coming to the class in which the topic is scheduled. You are expected to work the assigned exercises after the corresponding material has been presented in class, and BEFORE the next class meeting (lecture or recitation). The suggested exercises at the end of this syllabus are not graded, but are there to give extra practice. Some students may have to work additional exercises from the text to attain sufficient mastery of the material. It is HIGHLY recommended (thorough not technically required) that students work on these exercises in addition to the WebWork exercises (see below).

**WebWork:** Graded homework will be assigned through WebWork. It is your responsibility to let your instructor know as soon as possible if you are having any issues logging into WebWork, or submitted your assignments. Please work on assignments well before the deadline so that any problems are detected early enough to fix them. Your lowest two WebWork assignment scores (including missed assignments) will be dropped. Homework must be properly submitted to WebWork before the deadline.

**Quizzes:** Weekly quizzes will be given in the lab section. These quizzes will have mathematical information, but will also have brief questions about upcoming topics in the course. (For example: Which topics do we plan to cover next week?) Be sure to read ahead so that you are prepared for these.

**Midterm Exams:** There will be 3 midterm exams in class, given on the indicated days (see the schedule in this syllabus). Please let your instructor know immediately if you will be unable to make any of the exams, and be sure to get the necessary documentation to prove your absence was an excused one.

**Grading:** Your minimal course grade will be computed as follows.

Homework:	10%	A-/A/A+	90%	–	100%
Quizzes	5%	B-/B/B+	80%	–	89.99%
Midterms:	$3 \times 20\% = 60\%$	C-/C/C+	70%	–	79.99%
Final Exam:	25%	D-/D/D+	60%	–	69.99%
Total:	100%	F	0%	–	59.99%

A “curve” (grade scale adjustment) may be applied in favor of the students if deemed necessary by your instructor.

### Tentative Schedule

Date	Day	Section and Topic	Exercises
Aug 22	M	5.2 The definite integral	p.??? : 1, 2, 5, 7, 15, 16, 20, 32
Aug 24	W	Review of foundations	Worksheet
Aug 26	F	5.3 The fundamental Theorem	p.??? : 2, 3, 4, 5, 6, 19, 21, 23
Aug 29	M	6.2 Review of basic integration	p.330: 1-15 (odd), 21, 25, 26, 28, 33, 36, 41, 43, 46, 48-51, 53, 58
Aug 31	W	7.1 Integration by Substitution	p.360: 1, 2, 3, 6, 7, 9, 11, 15, 25, 27-31, 33, 40, 42, 43, 57-62, 71, 72, 74 76, 77, 80, 81
Sept 2	F	7.2 Integration by Parts	p.368: 1-3, 6, 7, 8, 10, 15, 20, 21, 25, 27, 28, 30, 31, 33-39 (odd), 41, 47, 48, 49, 53
<b>Last day to drop without a W</b>			
Sept 5	M	<b>Labor Day, No classes</b>	
Sept 7	W	7.3 Table of Integrals	p.??? : 1, 7, 10, 11, 12, 15, 16, 20, 33, 34, 45, 46, 49
Sept 9	F	7.4 Partial Fractions & Trig. Substitutions	p.384: 1, 3, 5, 10, 12, 16, 17, 18, 19, 33, 35, 41, 42, 45, 47, 49
Sept 12	M	Catch up/Review	
Sept 14	W	<b>Gateway practice exam (in class)</b>	
Sept 16	F	7.4 Partial Fractions & Trig. Substitutions	p.384: 52, 20,21, 55, 57, 55-63(odd), 62, 67, 69
Sept 19	M	7.5 Numerical Integration	p.392: 1, 2, 7, 16, 29, 30
Sept 21	W	7.6 Improper Integrals	p.401: 1, 2, 5, 7, 8, 9, 11, 12, 15, 16, 20, 22, 23, 26, 28, 29, 35, 48
Sept 23	F	7.7 Comparison of Improper Integrals	p.406: 1-7(odd), 8, 11, 15-25 (odd)
Sept 26	M	Catch up/Review	
Sept 28	W	<b>EXAM 1 (in class)</b>	
Sept 30	F	8.1 Areas & Volumes	p.419: 2, 3, 7, 9-17 (odd), 18, 21, 24, 28, 29, 31, 32, 34, 36
Oct 3	M	8.2 Volumes by Slicing & Arc Length	p.427: 5-13(odd), 13,14, 15–17 (numer. integr.), 18, 20, 21-23, 25, 26, 29, 31, 32 43, 44, 45, 49, 53
Oct 5	W	8.3 Area & Arc Length in Polar Coordinates	p.438: 1, 2, 5-8, 13, 15, 17, 18, 19, 25, 26, 27, 32,33, 34, 39, 40, 43, 44
Oct 7	F	Catch up/Review	
Oct 10	M	8.4 Density (only)	p.446: 1-3, 5(c) (use trapez. rule), 13, 15, 16(b)
Oct 12	W	8.5 Applications to Physics (work only)	p.456: 1, 4-6, 11-15 (odd), 18, 19, 21, 23, 26(b)
Oct 14	F	Catch up/Review	
<b>Last day to change to or from Pass/No Pass</b>			
Oct 17,18	M,T	<b>Fall break, No class</b>	
Oct 19	W	9.1 Sequences	p.495: 1, 2, 7, 9, 11, 13, 16, 20-25, 28, 29, 41, 43
Oct 21	F	9.2 Geometric Series	p.502: 8-14, 19, 20, 23, 25-30, 40, 41
Oct 24	M	9.3 Convergence of Series & the Integral Test	p.510: 4-7, 10, 11, 15, 16, 17, 21, 25, 26, 27, 28, 29, 46
Oct 26	W	9.4 Tests for Convergence	p.518: 1, 3, 4-7, 8, 9, 10, 11, 12, 14, 15, 17, 18, 20, 21-24
Oct 28	F	9.4 Tests for Convergence (Include the Root Test)	p.518: 25-28, 29-35 (odd), 36, 38-40, 41-47(odd), 53, 55, 61, 62, 65 66, 67, 69-77(odd), 79, 80, 81, 84-86, 94, 95
Oct 31	M	9.5 Power Series	p.527: 1-3, 4, 5, 7, 10, 12,13, 15, 17-20, 21, 28-32, 40, 43, 45
Nov 2	W	Catch up/Review	
Nov 4	F	<b>EXAM 2 (in class)</b>	
Nov 7	M	10.1 Taylor Polynomials	p.544: 1-3, 6, 7, 12, 18, 19, 29, 31
Nov 9	W	10.2 Taylor Series	p.550: 1, 4, 7, 9, 15, 17, 18, 19, 21, 22, 32, 33, 35, 36, 37, 44, 45
Nov 11	F	Defining Logs and Exp the right way	To be announced
<b>Last day to drop with a W</b>			
Nov 14	M	10.3 New Taylor Series from Old	p.557: 1, 3, 4, 6, 8, 9, 10, 11, 12, 14, 27, 32, 33, 37
Nov 16	W	10.4 Error in Taylor Polynomials	p.563: Use Theorem 9.9 to work: 2, 3, 5, 17, 19
Nov 18	F	10.4 Error in Taylor Polynomials	1, 5, 6, 9, 15 16, 20, 21, 22
Nov 21	M	Catch up/Review	
Nov 23	W	<b>Thanksgiving, No class</b>	
Nov 25	F	<b>Thanksgiving, No class</b>	
Nov 28	M	10.5 Fourier Series	5, 6, 8, 12, 17
Nov 30	W	Catch up/Review	
Dec 2	F	<b>EXAM 3 (in class)</b>	
Dec 5	M	Catch up/Review	
Dec 7	W	Catch up/Review	
Dec 9	F	Catch up/Review	
Dec 15	R	<b>FINAL EXAM, 10:00 am–12:00 pm</b>	<b>Location: OLDH 208 (our usual classroom)</b>

**Course Schedule:** The tentative schedule in this syllabus (given above) is a rough guide to the material covered in the course, but is subject to change. **Updates and changes to the content will be announced in class, over email, or on the course website. You are responsible for all material and announcements in class regardless of whether or not you attended class.**

**Getting help:** When you need help with something in the course, you have several options:

- Try discussing the material with your classmates; learning from and explaining to your peers often contributes most to your own understanding.
- Talk to your TA or the primary instructor during their office hours.
- Last but not least, there is the **Math Resource Center** (MRC) in Avery 13. The hours for the MRC are 12:30–8:30 p.m. Monday through Thursday, 12:30–2:30 p.m. on Friday, and 1:00–5:00 p.m. on Sunday.

**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 permitted to take the final exam early. The final exam for this course will be on:

**Thursday, Dec 15, 10:00 am–12:00 pm (Location: OLDH 208, the usual classroom).**

**Incompletes:** A grade of “incomplete” may be considered if all but a small portion of the class has been successfully completed, but the student in question is prevented from completing the course by a severe, unexpected, and documented event. Students who are simply behind in their work should consider dropping the course.

**Disclaimer:** While this syllabus was prepared carefully and according to information available at the beginning of the semester, changes may be necessary in the interest of good teaching. Changes to any of the information above will be announced in class and posted on the class web site. This includes in particular possible updates or corrections to the syllabus, and changes of exam dates.

**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.

**ADA Language:** 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 (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

**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.