

Math 135: Calculus I (Sec. 1 — Fall 2018)

Course name: Math 135 - Calculus I (Section 1)

Instructor: Danny Crytser

Office: Valentine 211

Email: dcrytser@stlawu.edu (preferred means of contact). On weekdays, I check my email faithfully from 9 AM-5 PM, moderately from 5 PM-7 PM. Any email I receive after 7 PM counts as being received the next day, so don't expect a prompt reply.

Office phone: (315) 229-5672

Meetings: MW 8:50-10:20 in Valentine 208. No use of phones or laptops during class meetings. Monday meetings will include group work for which you receive 1 extra credit point per week (if you participate!).

Office hours: Monday and Wednesday 10:30-11:30, Tuesday 10:00-11:30, *and by appointment*. If you can't make it to scheduled office hours, please email me!

Office hours are one of the most useful tools at your disposal. If you stop by outside of office hours with no appointment, I will not be available.

Textbook: *Calculus: Single Variable* by Hughes-Hallett et al., 7th ed.

Course contents: This course is an introduction to the derivative, which is the first concept of calculus. The course consists of four parts:

- (1) review of precalculus and functions;
- (2) rates of change and the concept of the derivative;
- (3) efficient rules for computing the derivative;
- (4) applications of the derivative.

Each of these parts builds on the previous, so it's important to keep up!

Derivatives are incredibly important in mathematics, science, and economics. You can also solve interesting geometry problems using derivatives, optimize pricing structures, or determine the path of projectiles. Plus they're generally fun and easy to compute, and open up a big world of mathematical ideas to explore.

Homework: There are written assignments assigned *AFTER EACH CLASS* (!) and due the following Wednesday. No HW is assigned on exam days, but there will be HW assigned on review days.

Quizzes: There will be quizzes each Wednesday at the end of class. These are not meant to be difficult and will mostly consist of near-duplicates of HW problems or problems we've gone through in class.

Exams: Three midterms and a final. The midterms are on the weekly schedule on the next page. Please let me know if this schedule conflicts with any of your other commitments. Generally I will allow makeups for university-sanctioned activities and for medical/family emergencies, but not in any other case.

Grading: There are 800 pts you can earn in this course. The total semester HW grade is worth 50 points, the midterms are worth 100 pts each, the final is worth 150 points, and each of the 10 quizzes is worth 30 points. There *may* be opportunities for extra credit/bonus points throughout the term. (Don't count on it.)

Grading scale: Here is the conversion between percentage and four-point scale.

94-100	4.0	73-75	2.25
91-93	3.75	70-72	2.0
88-90	3.5	68-69	1.75
85-87	3.25	65-67	1.5
82-84	3.0	63-64	1.25
79-81	2.75	60-62	1.0
76-78	2.5	0-59	0

Weekly schedule: This schedule is *tentative*.

Class	Section	Topics	Quiz?
W 8/29	1.1	Introductions. What is a function. Linear functions.	
M 9/3	1.2	Exponential functions. Logarithms.	
W 9/5	1.4	Exponential growth and decay/Power functions.	Quiz
M 9/10	1.6	Power functions. Polynomials. Rational functions.	
W 9/12	1.3	Adding and composing functions.	Quiz
M 9/17	1.5	Trig functions	
W 9/19	1.5	More trig	Quiz
M 9/24	–	Review	
W 9/26	–	EXAM 1	
M 10/1	2.1, 2.2	More average rate of change. Difference quotients	
W 10/3	2.2	The derivative.	Quiz
M 10/8	2.3	Finding the derivative algebraically. Tangent lines.	
W 10/10	3.1, 3.4, 3.2	Rules for computing derivatives: sum, constant multiple, power..	Quiz
M 10/15	3.5, 3.6	Chain Rule	
W 10/17	3.3	The Product Rule.	Quiz
M 10/22	3.3	The Quotient Rule. Implicit differentiation.	
W 10/24	3.7	Implicit Differentiation.	Quiz
M 10/29	–	Review	
W 10/31	–	EXAM 2	
M 11/5	2.6. 4.1	Continuity, differentiability, and critical points.	
W 11/7	4.1	Critical Points. Halloween!	Quiz
M 11/12	4.1	Min/max.	
W 11/14	4.3	Optimization.	Quiz
M 11/19	–	Thanksgiving break	
W 11/21	–	Thanksgiving break, ctd.	
M 11/26	4.3, 4.6	More optimization. Related rates.	
W 11/28	–	4.6	Quiz
M 12/3	–	Review	
W 12/5	–	EXAM 3	
M 12/10	4.7	Bit more related rates. Maybe limits/L'Hospital's rule	
W 12/12	–	Final review. Last class!	

FINAL EXAM: Monday, Dec. 17th, at 1:30 (in our lecture room).

How to succeed: The pace of this course is not meant to be punishing but, as a university course, this will probably be more difficult than your previous mathematics courses. As such you must attend all lectures, submit all HW, keep a consistent study schedule, and make use of all resources at your disposal. Those include: asking questions during lecture, coming to my office hours, going to the QRC, forming study groups, and if need be inquiring about private lessons/tutoring. I am more than happy to help you navigate the various resources at your disposal. However it is ultimately your responsibility to figure out how to succeed in this course.

Calculators: you will need a calculator in the TI-83 or TI-84 range, or other brand equivalent. You cannot use a TI-89 or equivalent, or anything more powerful than a TI-89.

Accessibility: Please inform me of any additional accommodation you require for this course. The Disability and Accessibility Services center in 33 Whitman Annex are the people to talk to *first*; after you have spoken with them, please inform me of the specific plan that I need to help you implement in order for you to succeed. I'm more than happy to comply with whatever plan you make, but I need advance notice, especially before exams. If you come to me a couple minutes before the exam and announce that you require special accommodations, I may not be able to help on such short notice.

Academic honesty policy: Click on the link to the pdf at <http://stlawu.edu/academic-affairs/resource/academic-honor-policy>

In this course you are encouraged to collaborate on HW, but don't copy your the work of your friends, and never cheat on quizzes or exams. When in doubt, please email me and I'll be very happy to clarify things for you.

Finally: Have fun!