

Math 205: Calc III (Sec. 3 — 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 (non-preferred means of contact)

Meetings: TTh 12:40-2:10 in Bewkes 303. No use of phones or laptops during class meetings. Tuesday 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: Multivariable* by Hughes-Hallett et al., 7th ed. (You can get access online via WileyPlus, or buy a physical copy. Also sufficient: *Calculus: Single + Multivariable* 7th edition, which contains the chapters we'll be using, which you can use as well. You need a copy of the book, either physical or digital. We won't use the online HW system.

Course contents: This course is an introduction to multivariable calculus, which extends the notions of derivatives and integrals to functions of more than one variable. As many quantities (price, pressure, or population, to name a few) depend on a great number of variables, it's enormously useful to be able to apply the methods of calculus to such functions.

In physics, economics, and other quantitative fields, multivariable calculus is applied constantly. This course will prepare you for these applications, as well as for Math 206 (Vector Calculus).

Homework: There are written assignments assigned after EACH CLASS (!) and due every Thursday. (You only ever turn anything in on a Thursday.) No HW is assigned on exam days, but there will be HW assigned on review days.

Quizzes: There will be quizzes each Thursday meeting, unless we have an exam that day. These are not meant to be very difficult and will mostly consist of near-duplicates of HW problems or problems we've gone through in class. Sometimes a quiz may include material that we introduced on the same day.

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 770 pts you can earn in this course. The total semester HW grade is worth 50 points, the three midterms are worth 100 pts each, the final is worth 150 points, and each of the nine quizzes is worth 30 points. You get a bonus point from participating in group assignments on Tuesday meetings. (Doesn't seem like much, but if you do all of them it's better than boosting one midterm by a full letter grade.) No other opportunities for extra credit in the course.

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?
Th 8/30	12.1	Intro. Function of ≥ 2 variables. Graphing	
T 9/4	12.1, 12.2, 12.3, 12.4	Graphing, contour diagrams. Linear functions/planes.	
Th 9/6	12.5, 12.6	Limits. Functions of several variables	Quiz
T 9/11	13.1, 13.2	Basics of vectors. Displacement vectors.	
Th 9/13	13.2, 13.3	More vectors. Dot product	Quiz
T 9/18	13.3, 13.4	More dot product. Cross product.	
Th 9/20	13.4	More cross product.	Quiz
T 9/25	–	Review	
Th 9/27	–	EXAM 1	
T 10/2	14.1, 14.2	Partial derivatives and how to compute them.	
Th 10/4	14.3	More computing of partials. Local linearity.	Quiz
T 10/9	14.4	Gradients. Directional derivatives.	
Th 10/11	14.4, 14.5.	Directional derivatives.	Quiz
T 10/16	14.6, 14.7	Second order partials.	
Th 10/18	–	MID SEMESTER BREAK	
T 10/23	15.1	Critical points. Local minimum and local maximum.	
Th 10/25	15.1, 15.2	Classifying critical points. Optimization..	Quiz
T 10/30	15.2	Least squares. Global min/max.	
Th 11/1	15.3	Lagrange multipliers.	Quiz
T 11/6	15.3	Review	
Th 11/8		EXAM 2	
T 11/13	16.1	Integrals in two dimensions	
Th 11/15	16.2	More integrals in two dimensions. Iterated integrals	Quiz
T 11/20	–	THANKSGIVING BREAK	
Th 11/22	–	THANKSGIVING BREAK, ctd.	
T 11/27	16.2	More iterated integrals. Probability	
Th 11/29	16.2	More probability.	Quiz
T 12/4	16.4	Review	
Th 12/6	16.6	EXAM 3	
T 12/11	16.3	Triple integrals.	
Th 12/13	–	Final review. Last class!	

FINAL EXAM: Wednesday, Dec. 19th, at 8:30 (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!