

Math 254: Calculus IV

(Section 2858, Fall 2016)

Class meets M/W from 1:15 to 3:30 pm (in Building 35 Room 351).
The prerequisite for this course is Math 152 (Calculus 2), with a C or better.

Instructor: Seth Braver (sbraver@spscc.ctc.edu; 596- 5482)

Office: Building 35, Room 256. (Office Hours: Noon-1:05, Monday through Thursday.)

Textbook: *Vector Calculus* by Michael Corral. You can obtain this book as a free pdf at www.mecmath.net, or order a bound paper copy for \$5 plus shipping at www.lulu.com: On that website, search for “Vector Calculus Corral”, then follow your nose.

Homework: I’ll assign some nearly every day. I’ll frequently discuss homework problems during class, but will neither collect homework nor grade it. This policy is an acknowledgement – and a reminder – that you are enrolled in a college-level mathematics course. Accordingly, I expect you to be mature enough to complete your work on your own without my having to reward you with gold stars or threaten you with detention. I am happy to discuss homework problems with you in class or in my office hours *after* you have made a serious effort at solving them on your own.

Grading: During the quarter, there will be a number of tests (probably three), on which neither calculators nor notes will be permitted. Counting your lowest score among these once and the others twice, I’ll produce your *weighted test average* [e.g. If your test scores are 64, 83, and 79, your weighted test average will be $(64+83+83+79+79)/5 = 77.6$], which will constitute 2/3 of your final grade. The remaining 1/3 will be determined by a **final exam on Tuesday, 12/6** from 1:15 to 3:05 pm. Your letter grade will correspond to your point total as follows:

A: 93 – 100 A-: 90 – 92 B+: 87 – 89 B: 83 – 86 B-: 80 – 82 C+: 77 – 79
C: 73 – 76 C-: 70 – 72 D+: 67 – 69 D: 60 – 66 F: 0 – 59

WAMAP: I’ll occasionally post documents (test solutions, handouts, etc.) online at www.wamap.org. To see this material, go to the WAMAP website, click “Register as a new student” (in the blue box on the right), and fill in the form. When filling it in, **do** click “Notify me by email when I receive a new message”. The course ID is **12736** and the enrollment key is: **gradient**

That’s it. You can now sign in anytime you like by entering your username and password.

Odds and Ends

Students eligible for learning accommodations must make arrangements with the Office of Disability Support Services. Those with a letter of accommodation should meet with me to discuss such accommodations.

Students receiving financial aid should always check with the Financial Aid Office prior to withdrawing or signing an incomplete contract. Note also that receiving an F or V grade in a course may also affect your financial aid status.

Finally, don’t cheat, and don’t be rude to others in the class. If you need of this sort of advice (which ought to go without saying) spelled out for you in legalistic detail, please consult the *Code of Student Rights & Responsibilities* on the college website, where you will also learn the consequences of academic dishonesty.

Official Fine Print.

STUDENT LEARNING OUTCOMES:

Upon completion of the course, the student will be able to:

- A. Use vectors in \mathbb{R}^2 and \mathbb{R}^3 to describe lines, planes, and curves.
- B. Compute and interpret partial derivatives.
- C. Compute and interpret multiple integrals.

COLLEGE-WIDE ABILITIES:

Evaluate and process quantitative and symbolic data.

COURSE CONTENT:

- A. Multivariable functions (\mathbb{R}^n to \mathbb{R}) and three-dimensional analytic geometry.
- B. Algebra and geometry of vectors including the dot and cross products.
- C. Differential Calculus: partial and directional derivatives, the gradient, optimization.
- D. Integral Calculus: double and triple integrals in rectangular, polar, cylindrical, and spherical coordinates.
- E. Parametric curves and surfaces, and calculus thereupon.