Instructor: Thomas P.-Y. Yu
Phone: x-2066
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Office hours: Monday to Thursday 2:30 p.m. - 3:30 p.m., or by appointment (just email me to set up a time, or simply call my office if I can be of any help)

Grading: The grades will be based on two exams (25% each), quizzes (20% total) and a final exam (30%). The first exam is tentatively scheduled for week four of the quarter, and the second for week eight. They will take place during normal class times. Homework will be assigned but not collected. The quizzes will be similar in spirit to the homework and in some instances taken directly from the homework. Quizzes will take place in class on Thursdays of non-exam weeks. There will be approximately eight of them. Roughly speaking, then, each quiz represents about 2.5% of your final class average, so you are strongly advised to take the quizzes very seriously. You may use a “scientific calculator” on quizzes and exams, but if your calculator can do calculus, then you are not allowed to use it. You will not be allowed to use any device which is capable of browsing the internet. Make-up tests/quizzes are allowed only in extreme situations. But, please, if you miss a test or expect to do so, contact me immediately!

The grading scale will be as follows: 91-100% A, 90% A-, 89% B+, 81-88% B, 80% B-, 79% C+, 71-78% C, 70% C-, 60-69% D, 0-59% F. There is no curve. All averages are rounded down. Special accommodations (for example, extra time) for taking exams and completing assignments are given only if the student provides me with appropriate documentation from the office of disability services (http://www.drexel.edu/ods/student_reg.html). Note that I do not take attendance in this course or factor it directly into your average, but I do expect all students to attend every class, barring sickness or other emergency.

Prerequisites: The university mandated prerequisites for this class are MATH 200 (Multivariable Calculus) and MATH 201 (Linear Algebra). Students are expected to be familiar with the following concepts: vectors, vector addition, scalar multiplication; the dot and cross products; equations for lines, planes, etc; polar, cylindrical, spherical coordinates; matrices and matrix operations; eigen-vectors, eigenvalues; partial differentiation; parameterized curves and surfaces; functions of multiple variables; vector valued functions; the gradient; multiple integrals. The preceding list is, of course, non-exhaustive but instead is meant to provide an idea of the sorts of things students should be facile with to succeed in this course.

Course description & expectations: This course covers core concepts of vector calculus, especially those related to integration. Topics include: vector algebra; the gradient, divergence and curl of functions of multiple variables; curvilinear coordinates; the “big three” integration theorems: Green’s theorem, the divergence theorem, and Stokes’ theorem; applications of the above. Vector calculus is used in a large number of areas of mathematics and engineering, for instance in geometry, electromagnetism, classical mechanics, fluid mechanics, quantum mechanics and probability. This course introduces the key ideas of vector calculus in a theoretical framework. The following outcomes are expected: (a) students
can compute multiple integrals in $\mathbb{R}^n$ (b) students know how to compute the gradient, divergence and curl of a given function (c) they can compute path and surface integrals of vector values functions (d) they can utilize Green’s theorem, the divergence theorem and/or Stokes’ theorem to efficiently compute integrals (e) they can change from rectilinear to curvilinear coordinates in high dimensions (f) they can use the above in applications.

**Academic Policies:** Students should be familiar with Drexel policies on dropping courses. See: [http://www.drexel.edu/provost/policies/course drop.asp](http://www.drexel.edu/provost/policies/course drop.asp) Students should be familiar with Drexel policies on academic integrity, plagiarism and cheating. See: [http://www.drexel.edu/studentlife/judicial/honesty.html](http://www.drexel.edu/studentlife/judicial/honesty.html) [http://www.drexel.edu/provost/policies/academic dishonesty.asp](http://www.drexel.edu/provost/policies/academic dishonesty.asp)