INSTRUCTOR: Marc Thomas


DESCRIPTION: This course is the second of a two quarter preparatory sequence for calculus. The first quarter (Mathematics 191) covers graphing, functions, polynomial and rational functions, and exponential and logarithmic functions. The second quarter (Mathematics 192) is a thorough coverage of all properties (geometric, analytic, and algebraic) of the trigonometric functions and their inverses. The material in this course is fundamental for calculus and its applications in several fields of study: Biology, Chemistry, Computer Science, Economics, Engineering, Geology, Mathematics, and Physics.

One feature of college mathematics, as opposed to the mathematics presented in high school (Algebra I and II, Geometry, ...), is a much stronger emphasis on understanding and applying principles. It is not sufficient to memorize procedures for solving certain "types" of problems — there are simply too many different types of problems. It may help as you study the material to always ask yourself what principles are being utilized to solve a particular problem. Mathematics texts also require re-reading. Many concepts (even definitions) are confusing at first sight. One week later, upon re-reading, these same concepts are often much clearer.

It is Mathematics department policy that graphing calculators (as well as computer algebra systems) are not to be used on exams in the first calculus course. Since this course is a prerequisite for the first calculus course (Mathematics 201) I have decided not to allow the use of graphing calculators on exams in this course. You may, if you wish, use them on labs and homework.

Lab work will include problems which exemplify the principles discussed in lecture.

We will cover all of the material in chapters 6–9 and part of chapter 11 in this course.

6. Definition of trigonometric functions and their use in right-angle trigonometry; trigonometric identities.
7. Unit circle trigonometry; radian measure; graphs of trigonometric functions.
8. Analytical trigonometry; additional identities; inverse trigonometric functions.
9. Other applications; parametric equations; polar (as opposed to rectangular) coordinates.
11. The conic sections.

GRADING: Two midterms will be given, each worth 30%. I do not give make-up midterms; for an excused absence I count the other grades proportionately higher. One final exam, comprehensive but emphasizing the later material will be given. This is mandatory and is worth 30%. Homework and lab work together are worth 10%. Since the desire is that the homework and lab work be a learning experience, these assignments will be graded on a good/satisfactory/unsatisfactory basis.