Syllabus for Math 203, Analytic Geometry and Calculus III

Prereq: C or higher in Math 20200 Text: Stewart, *Essential Calculus, 2nd ed.*

Section	Topics	Suggested lecture hours
10.1	Coordinates in space	1
10.2	Vectors in space	1
10.3	Dot product	1
10.4	Cross product	1.5
10.5	Lines and planes	1.5
10.6	Cylinders and Quadric surfaces	2
10.7	Curves in space, tangent vectors	1
13.6	Parametric surfaces (examples)	1
11.1	Functions of several variables	1.5
11.2	Limits and continuity	1.5
11.3	Partial derivatives	1.5
11.4	Tangent planes, differentials	2.5
11.5	Chain rule	1
11.6	Directional derivative, gradient	1.5
11.7	Extrema	2.5
12.1	Double integrals over rectangles	1
12.2	Double integrals over general regions	2
12.3	Double integrals in polar coordinates	1.5
12.4	Applications of double integrals	1
13.6	Parametric surfaces and surface area	1
12.5	Triple integrals	2
12.6	Triple integrals in cylindrical	1
12.7	Triple integrals in spherical	1.5
8.1	Sequences	1.5
8.2	Series	2
8.3	Integral test, comparison test	3
8.4	Other tests for convergence	3
8.5	Power series	2
8.6	Representing functions as power series	1.5
8.7	Taylor series, Maclaurin series	2
8.8	Applications of Taylor polynomials	2

Course format: 5 contact hours per week. 4 hours per week will be in traditional lecture/recitation style. One hour per week will meet in the Artino computer lab, with no more than two students per computer. Students will be expected to turn in computer assignments, at a rate of roughly one each week, that demonstrate knowledge of the computer algebra/graphics package and how to apply it to multivariable calculus.

Total: 50 hours of lecture time and 14 hours of computer lab time. There are usually 56 hours of lecture time each semester, of which about 4 should be used for exams.

There is a departmental MATLAB guide online with lab exercises.

A one-hour lab final exam will be given to students individually during the last two lab sessions. A class may have to be split for this depending upon the size of the class. The exam should be designed to test proficiency in using the MATLAB package to solve routine multivariate calculus problems. The total of all MATLAB work is to count 10% of the student's course grade.

The final exam counts for 40% of the course grade. Daytime sections will have a departmental group final exam.