MATH 2263 SYLLABUS
ANALYTIC GEOMETRY AND CALCULUS III

Course Description

Higher dimensional and vector calculus, functions of several variables, partial derivatives, multiple integrals, line and surface integrals.

Prerequisites

Math 2262.

Textbook

Calculus: Concepts and Contexts, by James Stewart, Brooks/Cole, 1998.

Incorporation of Technology

Computer software may be used as deemed appropriate by the instructor.

Approximate Timeline

Below are the text sections to be covered with approximate times based on 60 meetings. Ample room is left to allow the teacher the flexibility to cover additional topics, hold problem solving sessions, laboratory sessions, reviews and exams.

Chapter 10. Vector Functions .... 7 - 9 hours

> Included topics: Vector functions and space curves, derivatives and integrals of vector functions, arc length, curvature, motion in space, and parametric surfaces.

Chapter 11. Partial Derivatives .... 12 - 15 hours

> Included topics: Functions in several variables, limits, continuity, partial derivatives, linear approximation and tangent planes, directional derivatives andthe gradient, maximum and minimum values, and Lagrange multipliers.

Chapter 12. Multiple Integrals .... 13 -17 hours

> Included topics: Double and iterated integrals, applications, triple integrals, integration using polar, cylindrical and spherical coordinates, and change of variables in multiple integrals.

Chapter 13. Vector Calculus .... 10 - 14 hours

> Included topics: Vector fields, line integrals, Green's theorem, the curl and divergence operations, surface integrals, Stoke's theorem and the divergence theorem.

Text Summary for Math 2261, 2262, 2263 - Continued

Calculus, Concepts and Contexts, James Stewart, 1998.

Math 2263: Calculus and Analytic Geometry III