

## Syllabus for Basic Multivariate Calculus at Swarthmore

From our catalog:

### **MATH 033. Basic Several-Variable Calculus**

This course considers differentiation and integration of functions of several variables with special emphasis on two and three dimensions. Topics include partial differentiation, extreme value problems, Lagrange multipliers, multiple integrals, line and surface integrals, Green's, Stokes', and Gauss' theorems. The department strongly recommends that students take MATH 034 instead, which provides a richer understanding of this material by requiring linear algebra as a prerequisite.

Prerequisite: calculus of a single variable, but not linear algebra.

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More detail about Math 33 as offered in Spring 2007. When part of a chapter was not covered, a parenthetical remark is made.

Text: Multivariable Calculus 5/e, James Stewart, Thompson Learning Inc, 2003

Ch 11. Parametric Equations and Polar Coordinates (conic sections not covered)

Ch 13. Vectors and Geometry of Space

Ch 14. Vector Functions (curvature covered lightly)

Ch 15. Partial Derivatives

Ch 16. Multiple Integrals (general change of variable covered lightly)

Ch 17. Vector Calculus, i.e., Green-Gauss-Stokes