MATH 230 SYLLABUS (REVISED)
Spring 1994

Section: 230.3; Monday, Wednesday, Thursday, Friday, 11:15 AM to 12:05 PM; 273 Willard.

Instructor: Stephen G. Simpson; 333 McAllister; 863–0775.

Office Hours: Mondays 3:15–4:30 PM, Thursdays 2:45-4:30 PM.

NOTE: Stephen G. Simpson is not to be confused with Todd A. Simpson, the instructor of another section of Math 230.

Course Description: MATH 230. CALCULUS AND VECTOR ANALYSIS (4 credits).
Three-dimensional analytic geometry; vectors in space; partial differentiation; double and triple integrals; integral vector calculus.

Prerequisite: MATH 141.

Textbook: C. H. Edwards, Jr. and D. E. Penney, *Calculus and Analytic Geometry*, Third Edition, Prentice–Hall, 1990.

January 10–14. §§13.3–13.5.
Vectors in the plane; position, velocity, and acceleration vectors; projectiles; polar coordinates; radial and transverse components of velocity and acceleration; Kepler's laws.

QUIZ #1, Monday, January 17.

January 17–21. §§14.1–14.4.
Vectors in space; vector products; lines and planes in space; curves and moving points in space.

January 24–28. §§14.5, 14.7.
Curvature; normal component of acceleration; cylindrical and spherical coordinates.

QUIZ #2, Monday, January 31.

January 31 – February 4. §§15.1–15.4, 15.5, 15.10.
Partial derivatives; maxima and minima for functions of several variables; second derivative test.

FIRST MIDTERM EXAM, Wednesday, February 9, 6:30–7:45 PM

February 7–11. §§15.6, 15.7.
Differentials, chain rule; gradients; directional derivatives.

QUIZ #3, Monday, February 14.

February 14–18. §§15.8, 15.9.
More on maxima and minima; Lagrange multipliers.

February 21–25. §§16.1, 16.2.
Double integrals; double integrals over general regions.

QUIZ #4, Monday, February 28.

February 28 – March 4. §§16.3, 16.4.
Double integrals; area and volume; polar coordinates; change of variables.

March 7–11. **SPRING BREAK.**

March 14–18. §§16.5, 16.8, 16.9.
Surface area; change of variables.

SECOND MIDTERM EXAM, Monday, March 21, 6:30–7:45 PM

March 21–25. §§16.6, 16.7, 16.9.
Triple integrals. Cylindrical and spherical coordinates; change of variables.

March 28–April 1. §§17.1, 17.2, 17.3.
Vector fields; line integrals; potential functions.

QUIZ #5, Monday, April 4.

April 4–8. §§17.3, 17.4.
Path-independent line integrals; Green's theorem.

April 11–15. §§17.5, 17.6.
Surface integrals; orientable surfaces; the Divergence theorem.

QUIZ #6, Monday, April 18.

April 18–22. §§17.6, 17.7.
Stokes' theorem. Examples.

April 25–29.
Catch up and review.

FINAL EXAM (date and time to be announced).

Grades:	Quizzes, homework	100
	Midterm Exams	$2 \times 100 = 200$
	Final Exam	150
	Total	450