

MATH 2934, Differential and Integral Calculus III
Representative Week-by-Week Outline of Topics

Week	Topic	Section†
1	Three dimensional coordinates systems Vectors Vector dot product	12.1 12.2 12.3
2	Vector cross product Equations of lines and planes	12.4 12.5
3	Cylinders and quadric surfaces Vector functions Derivatives and integrals of vector functions	12.6 13.1 13.2
4	Arc length (perhaps omit curvature) Motion in space Review and catch-up	13.3 13.4
5	Exam 1 Functions of several variables Limits and continuity of FSVs	14.1 14.2
6	Partial derivatives Tangent planes and linear approximations	14.3 14.4
7	Chain rule for partial derivatives Directional derivatives and gradients	14.5 14.6
8	Max and min values of FSVs Lagrange multipliers (optional topic if time permits) Review and catch-up	14.7 14.8
9	Exam 2 Double integrals over rectangles Iterated integrals	15.1 15.2
10	Double integrals over general regions Double integrals in polar coordinates	15.3 15.4
11	Triple integrals Triple integrals in cylindrical coordinates Triple integrals in spherical coordinates	15.7 15.8 15.9
12	Vector fields Line integrals	16.1 16.2

(continued)

†Sections refer to the designated course text *Calculus 7/e* by James Stewart.

13	Fundamental theorem for line integrals Green's theorem Review, Exam 3	16.3 16.4
14	Curl and divergence Parametric surfaces and their areas Surface integrals	16.5 16.6 16.7
15	Stokes' theorem Divergence theorem Review and catch-up	16.8 16.9
16	Final exam (as per University's official schedule)††	

††Evening classes have their final exams on the last regular class meeting of the 15th week of the semester.