

# Mathematics 8 – Term Syllabus

Fall 2004 — Based on Stewart 5<sup>e</sup>

July 6, 2004

Lecture	Sections	Topic
Day 1	6.1, 6.2	Areas between curves, volumes of revolution
Day 2	6.2	Volumes of revolution
Day 3	8.1	Integration by parts
Day 4	8.2	Trigonometric Integrals
Day 5	8.3, 8.4	Trigonometric substitution, partial fractions (simple)
Day 6	8.7	Numerical Integration (midpoint, trapezoid, Simpson, Lagrange interpolation?)
Day 7	8.7	Numerical Integration (error estimates)
Day 8	8.8	Improper Integrals
Day 9	12.1, 12.2	Sequences, Series of constants
Day 10	12.3, 12.4	Integral and comparison tests
Day 11	12.5, 12.6	Alternating series, ratio test
Day 12	12.8, 12.9	Power Series, Representations of functions as power series
Day 13	12.10	Taylor and Maclaurin series
Day 14	12.10	Taylor and Maclaurin series

Day 15	13.1, 13.2	Coordinates and vectors in $\mathbb{R}^2$ and $\mathbb{R}^3$
Day 16	13.3, 13.4	Dot product and cross product
Day 17	13.5	Lines in $\mathbb{R}^3$
Day 18	13.5	Equations of planes
Day 19	14.1, 14.2	Vector functions, space curves, derivatives and integrals
Day 20	14.3, 14.4	Arclength, velocity, acceleration
Day 21	15.1, 15.2	Functions of several variables, limits, continuity
Day 22	15.3	Partial Derivatives
Day 23	15.4	Tangent Planes and Approximation
Day 24	15.5	Chain Rule
Day 25	15.6	Directional Derivative
Day 26	15.6	Directional Derivatives and the gradient
Day 27	15.7	Maxima and Minima
Day 28	15.7	Maxima and Minima
Day 29	15.8	Lagrange Multipliers?/wrap up