Mathematics 8 – Term Syllabus

Fall 2006 — Based on Stewart 5^e

20 September 2006

Lecture	**Sections**	**Topic**
Day 1	8.1	Integration by parts
Day 2	8.2 & 8.3–	Trigonometric Integrals and begin Trigonometric Substitutions
Day 3	–8.3 & 8.4	Trigonometric substitution and simple partial fractions
Day 4	8.7	Numerical Integration (midpoint, trapezoid, Simpson)
Day 5	8.8	Improper Integrals
Day 6	12.1 & 12.2–	Sequences and Series of constants
Day 7	–12.2 & 12.3	Geometric Series and Integral Test
Day 8	12.4	Comparison Tests
Day 9	12.5 & 12.6–	Alternating series, ratio test
Day 10	–12.6	Ratio test
Day 11	12.8	Power Series
Day 12	12.9	Representations of functions as power series
	EXAM I (Oct 17)	Covering through Day 11
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
	EXAM II (Nov. 9)	Covering through Day 21
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