

MATH 2204: Introduction to Multivariable Calculus: Stewart 9E			
Section	Topic	Homework (red = optional)	
Unit 1: 13 lectures (50 min)			
7.5 Lectures	12.1	3-D Coordinate Systems	p.835-836 #6, 7, 14bf, 17, 20, 33 (also sketch), 38 (also sketch), 42 (also sketch), 44, 49
	12.2	Vectors	p.844-845 #5bdf, 13, 21, 23, 26, 27, 29, 31, 32, 35, 37
	12.3	Dot Product	p.852-854 #4, 9, 17, 24, 40 (also sketch a, b, proj_a(b), comp_a(b)), 43, 49, 51
	12.4	Cross Product	p.861-863 #1, 8, 15, 16, 20, 27, 32, 39, 45a
	12.5	Equations of Lines and Planes	p.872-874 #4, 13, 16, 26, 28, 33, 44, 48, 58a, 72
	12.6	Cylinders and Quadric Surfaces	p.881-882 #4, 5, 11, 16, 17, 18, 19, 20, 22, 28, 29, 39, 40, 45, 46
5.5 lectures	14.1	Functions of Several Variables	p.946-950 #3c, 4c, 7, 10 (also find range), 15, 16 (also find range), 25 (first octant), 30, 31, 45, 48, 61, 62, 63
	14.2	Limits and Continuity	p.960-961 #8, 10, 22, 23, 25, 26, 49, 50, 51, 53
	14.3	Partial Derivatives	p.969-970 #2b, 4, 13, 18, 21, 28, 37, 42, 51, 56, 58
	14.4	Tangent Planes and Linear Approximations	p.981-983 #3, 8, 18 (linearization only), 27, 28, 40, 41, 47
Unit 2: 10 lectures (50 min)			
5 lectures	15.1	Basic Double Integrals	p.1049-1051 #3b, 25, 28, 29, 33, 35, 48
	15.2	General Double Integrals	p.1060-1061 #19, 20, 39 (set-up only), 48, 56, 58, 61, 64, 71, 74
	15.3	Polar Coordinates	p.1067-1069 #8 (sketch only), 10, 11, 32, set-up only: 22, 41, 42, 49
	15.4	Applications of Double Integrals	p.1078 #8, 10 (set-up only), 15, 18 (set-up only)
5 lectures	15.6	Triple Integrals	p.1092-1094 #5, 31, 32, 35, 38, 51ab, set-up only: 20, 21, 22, 23, 39 (use dx dy dz)
	15.7	Cylindrical Coordinates	p.1100-1101 #2, 3, 11, 12, 19, set-up only: 21, 27, 32
	15.8	Spherical Coordinates	p.1106-1107 #2, 3, 7, 8, 20, 23, set-up only: 25, 31, 43, 45
		Review Exercises	p.1100 #24 (use cylindrical and spherical) p.1107 #32 (use cylindrical and spherical) p.1119 #25, 28, 34, 36, 40 (choose the easiest method)
Unit 3: 12 lectures (50 min)			
7 lectures	14.5	Chain Rule	p.991-993 #7, 14, 17 (assume g and h are differentiable), 18, 20, 28, 31, 38, 39, 42, 43b, 44
	14.6	Directional Derivatives and Gradient Vector	p.1005-1007 #1, 14, 17, 23, 30, 33, 39, 41, 47, 52, 56
	14.7	Maximum and Minimum Values	p.1016-1017 #2, 6, 13, 14, 16, 34, 35, 38
	14.8	Lagrange Multipliers	p.1026-1028 #3, 5, 9, 24, 28, 31 , 42, 49, 57

5 lectures	13.1	Vector Functions and Space Curves	p.895-897 #1, 3, 8, 11, 12, 19, 21, 25, 26, 40, 50, 52, 53, 57, 58
	13.2	Derivatives and Integrals of Vector Functions	p.902-903 #3, 8, 17, 23, 28, 36, 39, 44
	13.3	Arc Length and Curvature	p.913-914 #3, 4, 13, 17, 20 , 25, 28, 31, 36, 52, 53
	13.4	Motion in Space	p.924-925 #3, 8, 16, 21, 25, 28, 31, 39, 42