Multivariable Calculus **Pacing Guide**

Textbook: Stewart, *Calculus: Early Transcendentals,* 8th ed., Cengage Learning, 2016.

Reading	Topic	Days	
Review of Integration Techniques			
7.1	Integration by Parts	2	
7.2	Trigonometric Integrals	2	
7.3	Trig Substitution	2	
7.4	Partial Fractions	2	
7.5	Strategies for Integration	1	
7.8	Improper Integrals	2	
8.5	Probability	2	
Problem Sets, Quizzes, Review, and Test		4	17
Polar Equations, Polar Coordinates, and Conic Sections			
10.3	Polar Coordinates	2	
10.4	Calculus of Polar Equations	3	
10.5	Conic Sections	4	
10.6	Conic Sections in Polar Coordinates and Kepler's Laws	2	
Problem Sets, Quizzes, Review, and Test		4	15
Coordinates, Vectors, Planes, and Surfaces in 3 Dimensions			
12.1	3-D Coordinate Systems	2	
12.2	Vectors	3	
12.3	Dot Product	2	
12.4	Cross Product	3	
Problem Set, Quizzes, Review, and Test		4	14
12.5	Lines and Planes	3	
12.6	Cylinders and Quadric Surfaces	3	
Problem Set, Review, and Test		3	9
Vector Functions			
13.1	Vector-Valued Functions	3	
13.2	Derivative and Integrals of Vector Functions	3	
13.3	Arc Length	3	
Problem Set, Review, and Test		3	12
Partial Derivatives			
14.1	Functions of Several Variables and Contour Plots	3	
14.2	Limits and Continuity	2	
14.3	Partial Derivatives	3	
14.4	Tangent Planes and Linear Approximations	3	
14.5	Chain Rule	3	
Problem Set, Review, Test		4	15

14.6	Directional Derivatives and the Gradient Vector	4	
14.7	Max and Min Problems	3	
14.8	Constrained Optimization (Lagrange Multipliers)	3	
Problem Set, Review, and Test		3	13
Integrals			
15.1	Double Integrals over Rectangular Regions	3	
15.2	Double Integrals over General Regions	3	
15.4	Probability Revisited	2	
Problem Set, Review, and Test		3	11
15.6	Triple Integrals	3	
15.7	Triple Integrals in Cylindrical Coordinates	3	
15.8	Triple Integrals in Spherical Coordinates	3	
15.9	Change of Variables	3	
Problem Set, Quiz, Review, and Test		4	16
Vector Calculus			
16.1	Vector Fields	3	
16.2	Line Integrals	3	
16.4	Green's Theorem	3	
16.5	Curl and Divergence	4	
Problem Set, Quizzes, Review, and Test		5	18
			Total =140 (remaining days of the school year devoted to project work days, discussion of problems, and applications of concepts learned)