Week	Contents/Topics	Exercises	Practice Questions
1	**Partial Derivatives:** Introduction, Functions of Two or More Variables, Domain and its sketching, Level Curves and Level Surfaces	13.1	1-8,17-20,23-28, 43-44,51-60, 65-68
2	Limits and Continuity Limit Along Curves, open and closed sets, continuity, Limits at discontinuities, Limits by converting into polar coordinates, introduction of partial derivatives	13.2 13.3	1-26,34,35,38-40 1-13,17,18,25-50
3	Partial derivatives of functions of two or more variables, partial derivative function and notations, PD as rate of changes/slopes, PD from tabular data, implicit PDs, PDs and continuity, Higher order PDs, Equality of second order mixed derivatives,	13.3	57-65 ,69-100
4	Differentiability, Differentials and Local Linear Approximation The Chain Rule for PDs with tree diagram.	13.4 13.5	9-26 ,33-40 1-14,17-36,41-48
5	Directional Derivatives and Gradients Directional Derivatives, Gradients, Properties of gradients, Gradients are normal to level curves Tangent Planes and Normal Vectors	13.6 13.7	1-45,53-66 3-12
6	**MID TERM 1**		
7	Extreme value of function of two variables. Absolute & Relative Extrema, Extreme Value theorem, The second order Partials test Lagrange Multipliers Method	13.8 13.9	1,2,9-18 5-12
8	**Multiple Integrals:** Double Integrals ,Fubini's theorem	14.1	1-16
9	Double Integral over non-rectangular region Double Integral in polar coordinates	14.2 14.3	1-12,15-25,47-56 1-10
10	Double Integral in polar coordinates, Surface Area and Parametric Surfaces*	14.3 14.4*	23-34 1-10,13-16
11	**MID TERM 2**		
12	Triple Integrals, Change of Variable in Multiple Integrals Jacobians*	14.5 14.7*	1-8 1-12,35-38,44-46
13	**Vector Calculus:** Vector Fields, gradient, divergence and curl Line Integrals	15.1 15.2	17-28 7-14,19-30,37-40
14	Green's Theorem Surface integrals	15.4 15.5	1-14 1-8
15	Gauss-Divergence Theorem	15.7	1-4
16	Stokes' Theorem	15.8	1-12

Tentative Lecture Schedule: **Calculus, Howard Anton 10th edition**