

HPISD Curriculum: Multivariable Calculus								
Title		Estimated Duration	6 Weeks					
Unit 2: Partial Derivatives		6 weeks	1	2	3	4	5	6
Unit Overview								
The students will be able to analyze and work with Partial Derivatives								
Enduring Understandings								
The student will understand that:		Calculus can be used in 3-dimensional space; with respect to several variables.						
Concepts		Guiding/Essential Questions						
Two dimensional concepts transferred to three dimensions		How do you take a limit in 3-D space? What does a partial derivative look like? What does chain rule look like in 3-D space?						
Learning Targets								
In 3-Dimensional Space Students will be able to: <ul style="list-style-type: none"> • Take limits of functions of several variables. • Introduce the idea of partial derivatives as well as the standard notations and how to compute them. • Take a look at a couple of important interpretations of partial derivatives. • Take a look at higher order partial derivatives. • The idea of differentials to functions of several variables. • Look at the chain rule for functions of several variables. • Introduce the concept and computation of directional derivatives. 								
Formative Assessments				Summative Assessments				
Homework, Quizzes				Tests and Projects				

Processes and Skills: What students should be able to DO		Facts: What students should KNOW	
<ul style="list-style-type: none"> • Take limits of functions of several variable • Compute partial derivatives. • Solve important interpretations of partial derivatives. • Solve higher order partial derivatives. • Compute differentials, directional derivatives, and chain rule of several variables. 		<ul style="list-style-type: none"> • Understand limits of functions of several variable • Understand the idea of partial derivatives as well as the standard notations and how to compute them. • Take a look at a couple of important interpretations of partial derivatives. • Take a look at higher order partial derivatives. • Understand the idea of differentials to functions of several variables. • Look at the chain rule for functions of several variables. • Understand the concept and computation of directional derivatives 	
Topics			
limits	higher order partial derivatives	chain rule	
partial derivatives	differentials	directional derivatives.	
interpretations of Partial Derivatives			
Language of Instruction			
derivative	limit	differential	
integral	partial derivative	directional derivative	
Resources			
Calculus Textbook: Anton			