

HPISD Curriculum: Multivariable Calculus								
Title		Estimated Duration	6 Weeks					
Unit 6: Surface Integrals		6 weeks		2	3	4	5	6
Unit Overview								
The students will be able to analyze and solve surface integrals								
Enduring Understandings								
<b>The student will understand that:</b>	Calculus can be used in 3-Dimensional Space; with respect to Surface Integrals							
Concepts	Guiding/Essential Questions							
	What does a surface look like with parametric equations? How do you compute Surface Integrals in vector fields? What is the divergence Theorem?							
Learning Targets								
In three dimensional space students will develop an understanding of: <ul style="list-style-type: none"> <li>• The applications of a surface with parametric equations.</li> <li>• Surface integrals</li> <li>• Surface Integrals of vector fields</li> <li>• Stokes' Theorem</li> <li>• Divergence Theorem</li> </ul>								
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"> <li>• Solve applications of a surface with parametric equations.</li> <li>• Solve Surface integrals.</li> <li>• Solve Surface Integrals of vector fields.</li> <li>• Solve problems using Stokes' Theorem.</li> <li>• Solve Problems using Divergence Theorem.</li> </ul>		<ul style="list-style-type: none"> <li>• Understand applications of a surface with parametric equations.</li> <li>• Understand Surface integrals.</li> <li>• Understand Surface Integrals of vector fields.</li> <li>• Understand Stokes' Theorem.</li> <li>• Understand Divergence Theorem.</li> </ul>	
Topics			
parametric surfaces surface integrals	surface integrals of vector fields Stokes' Theorem	Divergence Theorem.	
Language of Instruction			
derivatives integrals	parametric	vector	
Resources			
Calculus Textbook: Anton			