

**Multivariable Calculus: Chapter 13C Syllabus** Good Luck to: \_\_\_\_\_

Objectives, by the end of the unit, you will be able to:

(did you write your name above, if not, you will earn zero points)

- ❖ Find Maximum and Minimum (local and global) values of a function of two variables in its domain
- ❖ Optimize a function of two variables with a constraint on a region on the xy plane
- ❖ Optimize a function  $f$  of two or more variables relative to a constraint defined by another function  $g$  having as many variables as  $f$ . For example: Optimize a function  $f(x, y, z)$  relative to a constraint defined by  $g(x, y, z)$

Pre-requisites:

- Partial Derivatives; directional derivatives; The Gradient and relationship to level curves of its function
- From Single Variable Calculus: ability to find local Extreme and Global extreme values of a function of one variable

Date	Day	In class activity	Homework assigned	Stamp
Jan 9 – 13	1	Lecture on finding Max and Mins of a function of two variables (focus on pages 977 – 981)	H1: 13.8: 1 – 13 odds	
	2	Review Homework Lecture on 13.8	H2: 13.8: 18, 19, 21, 30. You will need Mathematica for some of the assigned homework exercises.	
	3	Review Homework Continue L. on 13.8 (Focus on pages 981 – 985)	H3: Finish investigation Also from question 1 from the investigation draw the triangular bounds onto the surface defined by the function $f$ (of two variables). You may want to bring your laptop for day 4.	
	4	Review Homework Go to Canvas to get instructions to the activity	H4: Finish Java Applet investigation and 13.8: 31, 35, 39, 45	
Jan 17 - 20	1	Review Homework Lecture on 13.9	H5: Read and take copious notes on 13.9. Be prepared for group presentations	
	2	Group presentations on 13.9	H6: 13.9: 1 – 4, 7, 9	
	3	<b>Quiz on 13.8</b> Lecture on 13.9	H7: 11, 15, 19, 24, 39	
Jan 23 - 27	1	Review Homework Review exercises from 13.8 and 13.9	Finish exercises	
	2	<b>Quiz on 13.9</b> Review Homework; Begin PT	H8: Finish practice test	
	3	Review Practice test	Prepare for test	
	4	<b>Test on 13.8 and 13.9</b>	Read 14.1	

I \_\_\_\_\_ (zero credit if your name is not written) got \_\_\_\_ out of 24 points