Course Guide Calculus III: Spring 2018:

	Topic	My notes	Comments	Assignment due
M: 1-22	vectors, points, components	9 - 18		
T	dot products, angles, projections	18 - 28		
W	cross product	28 - 37		
TH	Lines and planes	38 - 50		
F	Curves and Surfaces	51 - 75		
M: 1-29	curvelinear coordinates	75 - 83		
T:	calculus of curves	89 - 101		Mission 1
W:	Arclength	101 - 105		
TH:	geometry of curves	105 - 115		
F:	3D motion	115 - 125		
M: 2-5	3D motion continued, possibly covering Kepler's Laws	125 - 130		
T:	Integration along a curve	130 - 134		Mission 2
W:	Integration along a curve	130 - 134		
TH:	Further examples			
F:	MATH BATTLE I: an in-class group challenge			
M: 2-12	Questions ?			
T:	TEST I		Covers Chapters 1 and 2 of my notes.	
W:	open sets and limits for several variables	137 - 142		
TH:	open sets and limits for several variables	143 - 148		
F:	directional derivatives & partial differentiation	149 - 157		
M: 2-19	directional derivatives via partial differentiation	158 - 162		
T:	gradient vector field, level curves, contour plots	162 - 169		
W:	partial diff. with three-variables & applications	170 - 179		
TH:	general concept of differentiation	180 - 192		Mission 3
F:	chain rules	192 - 205		
M: 2-26	tangent spaces & their equations	206 - 212		
T:	differentials and constrained partial diff.	212- 219		
W:	gradients in curvelinear coordinates	220 - 222		
TH:	Further examples			Mission 4
F:	MATH BATTLE II: an in-class group challenge			
M: 3-5	Questions?			
T:	TEST II		Covers Chapters 3 and 4 of my notes	
W 3-7	Assessment Day (which is lost)			
TH:	Lagrange multipliers	231 - 245		
F:	multivariate Taylor	246 - 251		
M: 3-12	second derivative test	252 - 257		
T:	closed set test	258 – 262		
W:	definition and basic multivariate integrals	265 - 270		
TH:	double integrals and TYPE I and II regions	270 - 285		Mission 5
F:	Further examples			
	Spring Break 3-19 to 3-23			
M: 3-26	cartesian triple integrals	286 295		
T:	change of variables for double integrals	295 - 307		

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W:	change of variables for triple integrals	308 - 319		
TH:	algebra and geometry of volume elements	320 - 322		
F:	Further examples			Mission 6
M: 4-2	Easter Monday			
T:	MATH BATTLE III: an in-class group challenge			
W:	Questions?			
TH:	TEST III		Covers Chapters 5 and 6 of my notes	
F:	vector fields and the gradient operator	325 – 328		
M: 4-9	On the calculation and properties of grad, curl and div	329 – 332		
T:	line integrals	332 – 335		
W:	conservative vector fields	335 – 338		
TH:	Green's theorem	339 - 345		
F:	Deformation thm, conservative vector fields	345 – 353		
M: 4-16	Surface integrals	354 – 364		
T:	Surface integrals	354 – 364		Mission 7
W:	Stokes' theorem	365 – 374		
TH:	Stokes' theorem	365 – 374		
F:	Stokes' theorem	365 – 374		
M: 4-23	Gauss' Theorem	374 – 383		
T:	Gauss' Theorem	374 – 383		
W:	Further applications			
TH:	Further applications			Mission 8
F:	MATH BATTLE IV: an in-class group challenge			
M: 4-30	Questions ?			
T:	TEST IV		Covers Chapter 7 of my notes	
W:	Something different		(may use these days to fix things missed ..	
TH:	Something different		in earlier part of semester due to…	
F:	Something different		snow as a best case scenario, but, so many other reasons	
M:5-7	Something different		to cancel class exist…)	
T:	Something different			
W: 5-9	Reading Day,			
M: 5-14	Final Exam: Monday 5-14, 9:00am-noon.		Comprehensive (let's say 9:00am-noon)	

- **Grades:** Tests 1,2,3,4 = 4(120pts)=480pts, Final = 240pts, Missions = 120pts, Math Battles 40pts, Daily Quizzes 100pts, Participation & Survey 20pts.
- **There are 8 Missions, each problem in these Missions is worth 1pt, there were be at least 120 problems assigned.**
- **Math Battles** are as indicated, there is one before each test
- **Daily Quizzes** can happen at any point. Here's how it works. I will announce recommended homework problems as the semester progresses. In classes after that point I may call on you to explain how to solve the problem and I may ask you to write the solution on the board. You are allowed the work to bring your work to the board. I will select students at random in each such quiz. As the semester progresses I will further clarify the grading system as it concerns the Daily Quizzes. The larger point here is that I want you to follow along as best you can this semester. Do not wait for a test to study!