

MATH 302: Calculus III

Text: *Calculus Early Transcendentals, 11th edition*, Anton, Bivens, and Davis, Wiley, 2015

Prerequisite: Math 301 with a "C" or better

A TI-83 or TI-84 Graphing Calculator is required.

Day	Section/Topic	Suggested Homework Problems
1	Basic Review	
2	11.1 Rectangular Coordinates in 3-space; Spheres; Cylindrical Surfaces	1,2,5,8-13,15,19-23,25,27,30-32,35,37,39,41
3	11.2 Vectors	1-15,17,19,21-31,45-50,57,58
4	11.3 Dot Product; Projections	1-16,24-31,37-40
5	11.4 Cross Product	1-7,10,11,13-29
6	11.5 Parametric Equation of Lines	1-10,12,15-38,43-46
7	11.6 Planes in 3-Space	1-23,25-31,43-46
8	11.7 Quadric Surfaces	1,2,7- 40
9	11.8 Cylindrical and Spherical Coordinates	1-12,15-18,19-46
10	Review Chapter 11	
11	Test 1	
12	12.1 Intro to Vector-Valued Functions	1-34
13,14	12.2 Calculus of Vector-Valued Functions	1-48
15	12.3 Arc Length	1-16
16	13.1 Functions of Two or More Variables	1-10,17,18,23-26,29-32,33-44,47,48,51-60,65,66
17	13.2 Limits and Continuity	1-27,33,41-48,50,51
18	13.3 Partial Derivatives	1-14,25-51,59-61,64,69-72,85-91
19, 20	13.4 Differentiability, Differentials, and Local Linearity	1-27,29,30,32-41
21	13.5 Chain Rule.	1-36,41-48
22	Review Chapter 12, 13	
23	Test 2	
24	13.6 Directional Derivatives and Gradients	1-28,33-46,53-66
25	13.7 Tangent Planes and Normal Vectors	1-12,23-28
26	13.8 Maxima and Minima of Functions of Two Variables	1-19,27,29,31-44

27, 28	13.9 Lagrange Multipliers	5-29
29, 30	14.1 Double Integrals	1-16,19-37
31	14.2 Double Integrals over Nonrectangular Regions	1-32,37-42,61,62
32	14.3 Double Integrals in Polar Coordinates	1-20,23-34
33	Review Chapter 13, 14	
34	Test 3	
35	14.4 Surface Area; Parametric Surfaces	1-26,33-37,39-44
36	14.5 Triple Integrals	1-11,15-26,33,34
37, 38	14.6 Triple Integrals in Cylindrical and Spherical Coordinates	1-20
39	14.7 Change of Variables; Jacobians	1-9, 21-25
40	15.1 Vector Fields	1-28,41,42
41	15.2 Line Integrals	1-30,33-35,37-48
42	15.3 Independence of Path; Conservative Vector Fields	1-19,23,24,27,28
43	Review Chapter 14,15	
44	Test 4	
45	15.4 Green's Theorem	1-18,39,40
46	15.5 Surface Integrals	1-8,33-38
47	15.6 Applications of Surface Integrals; Flux	1-7, 9-14, 16, 21, 27, 28
48	15.7 The Divergence Theorem	1-19
49	15.8 Stokes' Theorem	1-17
50	Review Chapter 15	
51	Test 5	
52	Additional Topics and/or Review for Final Exam	

EMERGENCY EVACUATION PROCEDURE: A map of this floor is posted near the elevator marking the evacuation route and the **Designated Rescue Area**. This is an area where emergency service personnel will go first to look for individuals who need assistance in exiting the building. Students who may need assistance should identify themselves to the teaching faculty.