

Syllabus for SM221 Calculus III Spring Semester, 2006-2007

Text: Calculus, Early Transcendentals, Edition 5e by James Stewart

1. Please see www.usna.edu/MathDept/website/Courses/Syllabi/2007Spring/221_SYL_Spring07.htm

This site will have the most up to date information about the course, including this syllabus, practice exams, etc.

2. Calculus III is very geometric in nature. Almost every concept we will study has a corresponding visualization. To help us in this regard, all students in this course are expected to have a calculator like the Voyage 200 with the capabilities to graph and do symbolic calculations. There will be assignments that use such a calculator as well as questions on the common final exam for which it is expected that the student has such a calculator.

3. If you would like help in the course, you should contact your instructor for extra-instruction. If your instructor is not available, try the **Math Lab**. It is staffed all six periods every class day with instructors who should be able to answer your questions. Also, hard copies of web page information will be kept there (syllabi, practice tests, etc.). Also, the **Midshipman Group Study Program (MGSP)** may be available to assist you in your studies. In this program, upper class midshipmen will be available to help as you work on Calculus III in study period. More information will be given to you about the particulars of MGSP at the start of the semester.

4. The latest version of the calculator manual is available online at:

http://education.ti.com/guidebooks/graphing/89ti/Voyage200Guidebook_Part2_EN.pdf

5. Exercises that ask for verbal explanations should be answered with complete sentences.

LESSON	SECTION & TOPIC	PROBLEMS
1.	12.1/2 3-D and Vectors	797: 1,10,13,33,36; 805: 1,15,21,28,30
2.	12.3/4 Dot and Cross Product	812: 1,7,11,22,35,37,45; 820: 9,10,16,25,37
3.	12.5 Lines and Planes	829: 1,3,5,13,23,26,33,45
4.	12.6 Cylinders and Quadric Surfaces	837: 4,7,13,21-28,42,43
5.	Projections in 3d Parameterizing simple surfaces	Parameterize the projections of the figures in 1030: 16, 31, 32 onto the coordinate planes.
6.	12.7 Cylindrical & Spherical	842: 3,9,13,31,35,37,43,57,63
7.	12.7 Cylindrical & Spherical	842: 19,29,32,33,34,50,51,59,60
8.	13.1 Vector Functions and Space curves	855: 1,4,7,11,19-24,40
9.	13.2 Derivatives and Integrals of Vector Functions	861: 1,8,13,21,36,39,50
10.	13.3/4 Arc Length and Motion in Space to mid p. 872	868: 1,3,4,9,11; 878: 1,5,7,16,19
11.	13.4 Projectile Motion (to 874)	878: 20,23,27
12.	Review	
13.	Review	
14.	Test on Chapters 12 and 13	
15.	14.1 Functions of Several Var.	897: 1,2,8,31,34,38,45, 53-58
16.	14.3 Partial Derivatives	919: 1,4,8,14,26,29

17.	14.3 Continued	919: 36,46,57,66,68,83
18.	14.5 Chain Rule	938: 3,6,7,13,21,40,47
19.	14.5 Chain Rule, continued	
20.	14.6 Directional Derivative & the Gradient Vector	950: 1,4,7,15,25,27,30
21.	14.6 Continued	950: 33,36,39; p. 930: 1,2
22.	Review	
22.	Test on Chapter 14	
23.	15.1/2 Double Integrals over Rectangles & Iterated Integrals	988: 1,5,9; 994: 6,11,13,17,21
24.	15.3 Double Integrals over General Regions	1002: 2,5,7,13,20,21
25.	15.3 Continued; 15.4 Double Integrals in Polar Coordinates	1002: 23,43,45; 1008: 3,4,10
26.	15.4 Continued	1008: 17,21,23,26,27,29
27.	15.5 Center of Mass in 2d	1018: 3,6,11
28.	15.6 Surface Area	1022: 3,5,9,10
29.	15.7 Triple Integrals	1030: 2,6,9,11,14,17
30.	15.7 Continued	1030: 21,31,25,35
31.	12.7 Cylindrical & Spherical	842: 35,39,43,55,58,62,65
32.	15.8 Triple Integrals Cylindrical	1037: 2,5,7,8
33.	15.8 Triple Integrals Spherical	1037: 3,17,20,24,36
34.	Review	
35.	Test on Chapter 15	
36.	16.1 Vector Fields	1060: 2,6,11-14,21,23
37.	16.1 ctd and 16.2 Line Ints	1060: 25,29-32; 1072: 17,19
38.	16.2 Line Integrals (ds)	1071: 1,3,21,37,41
39.	16.2 Line Integrals (dx, dy)	1071: 7,8,9, 45
40.	16.3 Fundamental Theorem for Line Integrals	1081: 1,2,4,7,11
41.	16.3/4 Green's Theorem	1081: 15,17,23,34; 1089: 1,3,8
42.	16.4 Green's Theorem	1089: 9,11,15,17
43.	16.5 Curl & Divergence	1096: 1,5,9,11,12
44.	16.5 Continued	1096: 13,15,17,19,21
45.	16.5 Continued	1096: 22,25,26,31
46.	16.6 Parametric Surfaces	1106: 1,2,3,4,11-16
47.	16.6 Continued	1106: 21,23,24
48.	16.6 Continued	1106: 27,31,35,37
49.	16.7 Surface Integrals	1119: 5,7,11,15; 1018: 2,9,13
50.	16.7 Continued	1119: 18,19,20,21,39,43
51.	16.9 Divergence Theorem	1131: 7,8,12,13,15
52.	16.9 Continued	1131: 23,24,25
53.	16.8 Stokes's Theorem	1125: 1,2,3,5
54.	16.8 Continued	1125: 7,9,19
55.	Review	
56.	Review	
57.	Test on Chapter 16	

58.	Review for final	
59.	Review for final	

Course coordinator: Assoc. Prof. Will Traves