

Syllabus for SM221 Calculus III
Fall Semester, 2007-2008

TEXT: *CALCULUS, Early Transcendentals*, Edition 5e by James Stewart

LESSON	SECTION	TOPIC	PROBLEMS	NOTES
1	12.1/12.2	3-D and Vectors (review)	p.797: 18,37,41; p.805: 19,25,31	
2	12.3/12.4	Dot and Cross Product (review)	p.812: 21,38,53; p.820: 15,27,35	x-prod applet
3	12.5	Lines and Planes (review)	p.829: 9,19,26,31,39,47,53	Wrench lab
4	12.6	Cylinders & Quadric Surfaces	p.837: 3,10,12,21-28,45	
5	12.7	Cylindrical & Spherical Coords	p.842: 3,9,31,36,37,58	
6	12.7	(continued)	p.842: 13,19,21,32-35,39,49,59	
7	13.1	Vector Functions & Space Curves	p.855: 1,6,11,15,19-24,40	
8	13.2	Derivs. & Integrals of Vect Fns	p.861: 1,2,3,5,9,18,25,39,50	
9	13.3/13.4	Arc Length & Motion in Space	p.868: 1,3,6,55; p.878: 2,3,10	
10	13.4	Motion in Space through p. 874	p.878: 15,16,19,23,24,28,29a	
11	Review			
12	Test 1		:	
13	14.1	Functions of Several Variables	p.897: 3,6,9,15,26,32,34	
14	14.1	(continued)	p.897: 38,41,46,53-58	
15	14.3	Partial Derivatives	p.919: 3,4,8,13,14,26,29	Hill Lab
16	14.3	(continued)	p.919: 36,39,45,53,57,66,67	
17	14.5	Chain Rule	p.938: 1,4,9,10,13,15	
18	14.5	(continued)	p.938: 16,17,23,35,37,40	
19	14.6	Directional Derivative & Gradient	p.938: 1,4,6,7,8,11,14, 18,20	
20	14.6	(continued)	p.938: 23,25,30,34,38,41,53	Proof Thm15
21	Review			
22	Review			
23	Test 2			
24	15.1	Double Integrals over Rectangles	p.988: 1,6,9,10,11	
25	15.2	Iterated Integrals	p.994: 1,4,14,21,26,33	
26	15.3	Double Integrals General Regions	p.1002: 1,8,15,17,19,23	
27	15.3/15.4	(continued)/Double Polar Integrals	p.1002: 37,43,52,53; p.1008: 1-4	Proof Ex53
28	15.4	(continued)	p.1008: 5-7,11,23,25,30	
29	15.7	Triple Integrals	p.1030: 2,3,8,9,11	
30	15.7	(continued)	p.1030: 15,18,25,27,35,37	
31	12.7	Review Cylind. & Sphere. Coords	p.842: 5,11,14,20,43,58,60,62	
32	15.8	Triple Integrals -- Cylindrical	p.1037: 1,5,7,8,15	
33	15.8	Triple Integrals -- Spherical	p.1037: 3,6,17,18,20,29	
34	Review			
35	Test 3			
36	16.1	Vector Fields	p.1060: 1,2,8,11-14	
37	16.1	(continued)	p.1060: 15-18,25,29,30,33	
38	16.2	Line Integrals	p.1071: 1,3,5,10,14,29	
39	16.2	(continued)	p.1071: 17,19,22,38,45	
40	16.3	Fundamental Theorem for Line Int	p.1081: 1,2,3,4,11,12	
41	16.3/16.4	(continued)/Green's Theorem	p.1081:15,17,23,33; p.1089: 1,2	
42	16.4	Green's Theorem.	p.1089: 7,8,13,15,17,19	
43	16.5	Curl & Divergence	p.1096: 1,4,5,9-12	
44	16.5	(continued)	p.1096: 13,14,15,20,21,25	Proof Thm11
45	16.6	Parametric Surfaces	p.1106: 1-4,11,13	
46	16.6	(continued)	p.1106: 17,18,19,21,23	

47	16.6	(continued)	p.1106: 31,33,36,37,44	
48	16.7	Surface Integrals	p.1119: 2,4,5,7,9,14	
49	16.7	(continued)	p.1119: 19,21,22,23,25,39	
50	16.9	Divergence Theorem	p.1132: 1,2,3,4,7	
51	16.9	(continued)	p.1132: 8,9,13,15,19	
52	Review			
53	Review			
54	Test 4			
55	16.8	Stokes' Theorem	p.1125: 1,2,3,5,7	
56	16.8	(continued)	p.1125: 9,10,13,17,19	
57	Review	for common final		
58	Review	for common final		

NOTES

1. There's a Review & Study day scheduled for 06 December. The Final Exam period is 07-14 December. At least one of the three proofs in the notes column above will be on the final exam.
2. The 3 web labs in the syllabus can be found at http://www.usna.edu/MathDept/website/local/courses/calc_labs/labs.html
3. All students in this course are expected to have a calculator like the Voyage 200 with the capabilities to do symbolic calculations. There will be assignments that use such a calculator as well as questions on the common final exam on which it is expected that the student has such a calculator. The latest version of the Voyage 200 guidebook in PDF format is at http://education.ti.com/guidebooks/graphing/89ti/Voyage200Guidebook_Part2_EN.pdf
Also, part of the final exam will not allow calculators.
4. 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 class periods every class day with instructors who should be able to answer your questions. There is also the [Midshipmen Group Study Program](#) (MGSP) available in the evenings provided by upper classmen. See links at: <http://www.usna.edu/MathDept/website/local/resources.htm>
5. A few copies of the text and student solution manuals have been put on reserve at the Nimitz circulation desk. Several old tests are available on-line.
6. Exercises that ask for verbal explanations (including any proofs) should be answered with complete sentences.

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