

SM 122 Syllabus Fall 2005 - 2006

Text: *Calculus Early Transcendentals 5th Ed.* by Stewart

Notes:

A web site at <http://www.usna.edu/MathDept/website/local/courses/fall2005.html> will have up to date information about the course, including this syllabus, practice exams, web links, etc.

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 above web site also has a link to a file with a list of the minimal competences expected of all students.

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. Also, hard copies of web page information will be kept there (syllabi, practice tests, etc.). There is also peer tutoring available in the evenings provided by upper classmen in the Midshipmen Group Study Program.

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

Lesson	Section & Topic	Problems
1	5.1 Areas with Riemann Sums	p. 378 2ai,2aii,2b,2c,3(40, 400 rect),5a,5b
2	5.2 Midpoint Rule	p. 378 2aiii,2d,5c,
3	7.7 Trapezoid Rule	p. 527 1,2,3,4
4	Voyage 200 definite integrals	p. 541 1,2,3,4,11,12,32
5	6.1 More Area	p. 442 1,2,5,7,8,13
6	5.1 Distance problems	p. 378 11,12,13,15 p. 442 41
7	6.2 Volumes with Disks	p. 452 1,11,15,47
8	6.3 Volumes with Shells	p. 458 2,4,8,17,20,46
9	6.4 Work - springs	p. 463 7,9,12
10	6.4 Work - water	p. 463 19,21,23,24,30
11	6.5 Average Value	p. 4367 1,2,3,16,18
12	8.3 Hydrostatic Pressure	p. 569 3,5,6,11,12
13	8.3 Moments & Centroids	p. 569 23,25,27,29,33,34
14	Review	
15	Review	
16	Test 1	
17	5.3 Fundamental Theorem of Calculus	p. 402 2,5,7,11,13,25,27,59

18	5.4 Net Change	p. 411 47,50,53,54
19	5.5 Substitution	p. 420 1,12,25,37,41
20	5.5 Substitution	p. 420 49,51,52,53
21	7.1 Integration by Parts	p. 480 2,3,4,7,11,13
22	7.1 Integration by Parts	p. 480 21,22,25,33
23	7.8 Improper Integrals	p. 537 1,2,3,5,7,16,25
24	9.1 Modeling with Differential Equations	p. 591 1,2,5,9,12,14
25	9.2 Direction Fields and Euler's Method	p. 1,2,3,4,5,6,9,21,22,28
26	9.3 Separable Differential Equations	p. 607 1,3,9,11,14,32,39
27	9.3 Applications of Separable Differential Equations	p. 609, 610 Applied Projects
28	Electric Circuits	Notes
29	9.4 Growth and Decay	p. 620 1,3,5,9
30	9.6 Integrating Factor	p. 636 1,2,3,4,5,7,15,33,35,36
31	Electric Circuits	Notes
32	Review	
33	Test 2	
34	10.3 Polar Coordinates	P. 1,2,3,4,7,8,9,31,37
35	Polar Graphing on Voyage 200	p. 677 33,37,39,41,45
36	10.4 Areas of Polar Coordinates (1 curve)	p. 683 5,6,7,8,9
37	10.4 Areas of Polar Coordinates (2 curves)	p. 683 23,27,28,29,33
38	12.1 Three-Dimensional Coordinates Systems	p. 797 2,8,9a,13,39 (39 in class)
39	12.2 Vectors	p. 805 1,2,4,7,13,17,23,27 p. 797 9b
40	Applications of Vectors	p. 805 28,29,30,32,33,34
41	12.3 Dot Product	p. 812 1,2,3,5,9,11,13,23
42	Applications of Dot Product	p. 812 15,16,19,21,45,47,48
43	12.4 Cross Product	p. 820 1,2,3,8,9,10,11,13,14
44	Applications of Cross Product	p. 820 23,25,35,36,45
45	12.5 Lines	p. 829 1a,b,j,2,3,6,7,19,20,21,22,42
46	12.5 Planes	p.829 1c,d,e,f,g,h,i,k,19,20,23,25,31,45
47	Review	
48	Test 3	

49	11.1 Sequences	p. 710 1,2,3,7,11,15,17,19,33,37
50	11.1 Sequences	p.710 41,43,50,55,56,61
51	Sequences of Taylor Polynomials (0-based)	Notes
52	11.10 Maclaurin Series	p. 770 3,4,5,6 (no radius)
53	Sequences of Taylor Polynomials (a-based)	Notes
54	11.10 Taylor Series	p. 770 14,15,17,18
55	11.2 Series	p. 720 3,5,6,8
56	Review	
57	Test 4	
58	Review for final exam	

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