Syllabus for SM122, SM122S, Calculus II, Fall Semester, 2009-2010

TEXT: *CALCULUS, Early Transcendentals*, Edition 6e by James Stewart

LESSON	SECTION	TOPIC	PROBLEMS	NOTES
1	5.3	Review Fund Thm of Calc	p.387:3,7,11,14,19,24,26,29,31,38,44	FTC applet
2	5.5	The Substitution Rule	p.406: 3,5,7,9,15,19,23	
3	5.5	Substitution (continued)	p.407: 26,28,29,37,49,51,54,58	
4	6.1	Areas between Curves	p.420: 1,3,5,9,11,12,14	
5	6.1	Areas (continued)	p.420: 16,20,23,35,43	
6	6.2	Volumes (Disks & Washers)	p.430: 1,3,5,9,11,17,29	Wing Lab
7	6.4	Work	p.441: 1,3,5,7,10	
8	6.4	Work (continued)	p.441: 13,15,19,20,21	
9	6.5	Average Value of a Function	p.445: 1,5,10,15,16,17	
10	Review			
11	Test 1			
12	7.1	Integration by Parts	p.457: 1,3,4,7,9,10,19	
13	7.1	Integr by Parts (continued);	p.457: 23,25,48,52;	
14	7.4	Partial Fractions	p. 481: 1,3,4,7,9	
15	7.4	Partial Fractions (continued)	p.482: 11,12,14,17,24,25	
16	7.7	Approximate Integration	p.505: 1,2,8,29,35	Not error bds
17	7.8	Improper Integrals	p.515: 1,6,8,11,13,15,28,31	
18	8.3	Hydrostatic Force	p.547: 1,3,7,9	
19	9.1	Modeling with Differential Eqs	p.571: 1,3,4,5,9,14	
20	9.2	Direction Fields	p.578: 1,3,4,7,8,11	
21	9.2	Euler's Method	p.579: 20,21,23,28	
22	9.3	Separable Differential Eqs	p.586: 1,3,10,11,12,15	
23	9.3	Separable (continued) Exponential Growth & Decay	p.586: 34; p.239: 3,9,11,13	
24	Notes: 1, 2	Electric Circuits: DC	Exercises A – 1,4,6,9	
25	Review			
26	Test 2			
27	10.3	Polar Coordinates	p.647: 1,3,6,10,15,25	
28	10.3	Polar Coordinates (continued)	p.648: 29,31,34,37,47,49,50	
29	10.4	Areas in Polar Coordinates	p.653: 1,2,5,8,18,27	Area only
30	11.1	Sequences	p.684: 5,9,14,15,17,18,26,28	
31	11.2	Series	p.694: 11-16,22,34,41,42,73	
32	11.5	Alternating Series	p.713: 2,3,7,11,23,31	
33	11.6	Ratio Test	p.719: 1,2,3,7,8,27	
34	11.8	Power Series	p.727: 3,7,9,15,30: rad of conv only	

35	11.9	Functions as Power Series	p.733: 3,4,9,15,27	
36	11.10	Maclaurin Series	p.746: 5,6,10,29,39,41	
37	11.10	Taylor Series	p.746: 2,13,15,17,51	
38	11.11	Applications of Taylor Polys	p.755: 1,14,16,21,27,31	
39	Review			
40	Test 3			
41	12.1	Three-Dimensional Coordinates	p.769: 3,5,7,10,11,13,25,29	
42	12.2	Vectors	p.777: 1,5,7,9,11,13,15,19,23	
43	12.2	Vectors (continued)	p.777: 24,25,28,29,30	
44	12.3	The Dot Product	p784: 1,3,5,7,9	
45	12.3	Dot Product (continued)	p.784: 15,17,23,25,35,37,45,47	
46	12.4	The Cross Product	p.792: 1,3,5,13,14,16	
47	12.4	Cross Product (continued)	p.792: 17,19,29,39,40,41	
48	12.5	Equations of Lines	p.802: 2,3,4,7,10,11,13,14	
49	12.5	Equations of Planes	p.802: 1,23,25,27,31,39,46,49	
50	12.5	Lines and Planes	p.803: 59,67,69,71,74	
51	13.1	Vector Functions & Space Curves	p.822: 1,6,11,15,19-24	
52	13.2	Derivs. & Integrals of Vect Fns	p.828: 1,2,3,5,9,18,25,39,50	
53	13.3/13.4	Arc Length & Motion in Space	p.836: 1,3,6; p.846: 2,3,10	
54	13.4	Motion in Space through p. 874	p.846: 15,16,19,23,24,28,29	
55	Review			
56	Test 4			
57-60	Review	for common final		

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NOTES

1. You can find an electronic copy of this syllabus on the Math Dept web page http://www.usna.edu//MathDept/website/local/
Follow the "Courses" link. You can also find a lot of helpful information such as practice exams, etc.

2. The value you get out of this course is proportional to the effort you put into it. Keep in mind that the primary goal (and your responsibility) in not just doing the problems, but rather understanding the material. Exercises that ask for verbal explanations should be answered in complete sentences.

3. If you would like help in this course, you should contact your instructor for EI. If your instructor is not available, try the Math Lab in CH 130. 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

4. Classes on Tuesday, 8 Sept. will follow a Monday schedule. The last day of classes is Friday 11 Dec. There's a Review & Study day scheduled for Monday 14 Dec. There are 60 class days

5. The 3 web labs in the syllabus can be found at
http://www.usna.edu/MathDept/website/local/courses/calc_labs/labs.html

6. 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

7. There will be a "gateway" quiz on integration. For a sample and explanation see:
http://www.usna.edu//MathDept/website/local/courses/gateways/gateways.html

8. The final exam will consist of 3 parts. Part A will have five problems to be worked without a calculator. This portion of the test must be completed before calculators are activated. One of the questions will be a proof. See Note 9 for details. Part. B will have fifteen multiple choice questions. Bubble in the best answer on the bubble sheet. Part C will have nine longer problems to be worked.

9. The proof will be one of three. 1. The integration by parts formula, Formula 1, page 453. 2. Taylor series for a function, Theorem 5, pages 734-735. 3. Formula for scalar and vector projections, pages 782-783.