Syllabus for SM122, SM122A Calculus II

Spring Semester, 2007-2008

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

LESSON	SECTION	TOPIC	PROBLEMS	NOTES
1	5.1	Areas and Distances	p.364: 1,4,8,11,16,17	Deck Lab
2	5.2	The Definite Integral	p.376: 1,5,7,11,16,34,36,49	
3	5.3	The Fundamental Thm of Calc	p.387:3,7,11,14,19,24,26,29,31,38,44	FTC applet
4	5.4	Indefinite Integrals	p.397: 1,2,9,16,19,25,35,62	
5	5.5	The Substitution Rule	p.406: 3,5,7,9,15,19,23	
6	5.5	Substitution (continued)	p.407: 26,28,29,37,49,51,54,58	
7	6.1	Areas between Curves	p.420: 1,3,5,9,11,12,16,20,35,43	
8	6.2	Volumes (Disks & Washers)	p.430: 1,3,5,9,11,17,29	Wing Lab
9	6.3	Volumes (Cylindrical Shells)	p.436: 1,3,8,12,19,45	
10	6.4	Work	p.441: 1,3,5,7,10	
11	6.4	Work (continued)	p.441: 13,15,19,20,21	
12	6.5	Average Value of a Function	p.445: 1,5,10,15,16,18	
13	Review			
14	Test 1			
15	7.1	Integration by Parts	p.457: 1,3,4,7,9,10,19	
16	7.1	Integr by Parts (continued); Partial Fractions	p.457: 23,25,48,52,58; p.481: 1,7,9	
17	7.4	Partial Fractions	p.482: 11,12,14,17,24,25 (note that "expand" on the Voyage 200 computes partial fractions)	
18	7.7	Approximate Integration	p.505: 1,2,8,29,35	Not error bds
19	7.8	Improper Integrals	p.515: 1,6,8,11,13,15,28,31	
20	8.1	Arc Length	p.530: 1,3,7,17,23,37	
21	8.3	Hydrostatic Force	p.547: 1,3,7,9	
22	8.3	Center of Mass	p.548: 21,23,25,27,35,36,40	video
23	Review			
24	Test 2			
25	9.1	Modeling with Differential Eqs	p.571: 1,3,4,5,9,14	
26	9.2	Direction Fields	p.578: 1,3,4,7,8,11	
27	9.2	Euler's Method	p.579: 20,21,23,28	
28	9.3	Separable Differential Eqs	p.586: 1,3,10,11,12,15	
29	9.3	Separable (continued) Exponential Growth & Decay	p.586: 34,41,43; p.239: 3,7,13	
30	9.5	Linear 1st Order ODEs	p.606: 1,3,5,6,13,16,17,29	
31	Notes: 1, 2	Electric Circuits: DC	Exercises A – 1,4,6,9	

32	Notes: 3, 4	Electric Circuits: AC, EMF decay	Exercises B – 1,3,5,7,10 all a-e	
33	10.1	Parametric Eqs for Curves	P626: 5,7,10,11,12,15,24,35	
34	10.2	Calculus w/ Parametric Curves	p.636: 1,3,6,7,41,44,51	Not areas
35	10.3	Polar Coordinates	p.647: 1,3,6,10,15,25	
36	10.3	Polar Coordinates (continued)	p.648: 29,31,34,37,47,54	
37	10.4	Areas in Polar Coordinates	p.653: 1,2,5,8,17,18	Area only
38	Review			
39	Test 3			
40	11.1	Sequences	p.684: 5,9,14,15,17,18,26,28	
41	11.2	Series	p.694: 11-16,22,34,41,42,73	
42	11.6	Ratio Test	p.719: 1,2,3,7,8,27	
43	11.8	Power Series	p.727: 3,7,9,15,30	Radius of convrg. only
44	11.9	Functions as Power Series	p.733: 3,4,9,15,27	
45	11.10	Taylor & Maclaurin Series	p.746: 2,5,6,7,9,10	
46	11.10	(continued)	p.746: 13,15,17,29,39,41,47,51	
47	12.1	Three-Dimensional Coordinates	p.769: 3,5,7,10,11,13,25,29	
48	12.2	Vectors	p.777: 1,5,7,9,11,13,15,19,23	
49	12.2	Vectors (continued)	p.777: 24,25,28,29,30	
50	12.3	The Dot Product	p784: 1,3,5,7,9	
51	12.3	Dot Product (continued)	p.784: 15,17,23,25,35,37,45,47	
52	12.4	The Cross Product	p.792: 1,3,5,13,14,16	x-prod applet
53	12.4	Cross Product (continued)	p.792: 17,19,29,39,40,41	Wrench Lab
54	12.5	Equations of Lines	p.802: 2,3,4,7,10,11,13,14	
55	12.5	Equations of Planes	p.802: 1,23,25,27,31,39,46,49,55,59	
56	Review			
57	Test 4			
58	Review	for common final		
59	Review	for common final		

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MWRF schedule contains 59 class days.
MTWF schedule contains 60 class days.

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. 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, 19 Feb will follow a Monday schedule. The last day of classes is Monday 28 April. There's a Review & Study day scheduled for Tuesday 29 April. There are 60 class days in the MWRF schedule and 59 in the MTWF schedule. The Final Exam period is 30 April - 07 May.

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