

Syllabus for SM122, SM122A Calculus II Spring Semester, 2010-2011

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

Problems in bold do not appear in WebAssign.

| LESSON | SECTION | TOPIC | PROBLEMS | NOTES |
|--------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------|
| 1 | 5.3 | Review Fund Thm of Calc | p.387:3,7,19,24,26,29,31,38,41 | FTC applet |
| 2 | 5.5 | The Substitution Rule | p.406: 3,5,7,9,15,19,23 | |
| 3 | 5.5 | Substitution (continued) | p.407: 26,28,29,37,48,51,54,58 | |
| 4 | 6.1 | Areas between Curves | p.420: 1,4,5,9,11,12 | |
| 5 | 6.1 | Areas (continued) | p.420: 14,16,20,23,43,45 | |
| 6 | 6.2 | Volumes (Disks & Washers) | p.430: 1,3,5,9,11,17,29 | Wing Lab |
| 7 | 6.4 | Work | p.441: 1,7,10,13,15 | |
| 8 | 6.4 | Work (continued) | p.441: 19,20,21,23 | |
| 9 | 6.5 | Average Value of a Function | p.445: 1,5,10,15,16,17, 23 | Proof: # 23 |
| 10 | Review | | | |
| 11 | Review | | | |
| 12 | Test 1 | | | |
| 13 | 7.1 | Integration by Parts | p.457: 1,3,4,7,9,10,19 | Proof: Eq #1 |
| 14 | 7.1 7.4 | Integr by Parts (continued); Partial Fractions | p.457: 23,25,48, 52 ; p.481: 1,7,9 | |
| 15 | 7.4 | Partial Fractions | p.482: 11,12,14,17,24,25 | |
| 16 | 7.7 | Approximate Integration | p.505: 1,2,8,30,35 | Not error bds |
| 17 | 7.8 | Improper Integrals | p.515: 2,6,8,11,13,15,28,31 | |
| 18 | 8.3 | Hydrostatic Force | p.547: 1,3,7,9 | |
| 19 | 8.3 | Center of Mass | p.548: 21,23,25,27,35, 36,40 | |
| 20 | 9.1 | Modeling with Differential Eqs | p.571: 1,3,4,5,9, 14 | |
| 21 | 9.2 | Direction Fields | p.578: 1,3,4,7,8, 11 | |
| 22 | 9.2 | Euler's Method | p.579: 20,21,23,28 | |
| 23 | 9.3 | Separable Differential Eqs | p.586: 1,3,10,11,12,15 | |
| 24 | 9.3 3.8 | Separable (continued) Exponential Growth & Decay | p.586: 34; p.239: 3,9,11,13 | |
| 25 | Notes: 1 , 2 | Electric Circuits: DC | Exercises A – 1,4,6,9 | |
| 26 | Review | | | |
| 27 | Review | | | |

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|----|--------|---------------------------------|----------------------------------------------|--------------------|
| 28 | Test 2 | | | |
| 29 | 10.3 | Polar Coordinates | p.647: 1,3,6,10,15,25 | |
| 30 | 10.3 | Polar Coordinates (continued) | p.648: 29,31,34,37,47,49,50 | |
| 31 | 10.4 | Areas in Polar Coordinates | p.653: 1,2,5,17,27 | Area only |
| 32 | 11.1 | Sequences | p.684: 5,9,14, 15 ,17,18,26,28 | |
| 33 | 11.2 | Series | p.694: 11-16,21,22,34,41,42 | |
| 34 | 11.5 | Alternating Series | p.713: 2,3,5,7,11,23 | |
| 35 | 11.6 | Ratio Test | p.719: 1 ,2,3,7,8,27 | |
| 36 | 11.8 | Power Series | p.727: 3,7,9,15,30: rad of conv only | |
| 37 | 11.9 | Functions as Power Series | p.733: 3,4,9,15,27 | |
| 38 | 11.10 | Maclaurin Series | p.746: 5,6,10,30,31, 42 | |
| 39 | 11.10 | Taylor Series | p.746: 2 ,13,16,17,51 | |
| 40 | Review | | | |
| 41 | Review | | | |
| 42 | Test 3 | | | |
| 43 | 12.1 | Three-Dimensional Coordinates | p.769: 4, 5 ,7,10,11,12, 27,31 | |
| 44 | 12.2 | Vectors | p.777: 1,5 ,7,9,11,13,15,19,23 | |
| 45 | 12.2 | Vectors (continued) | p.777: 24,25,28,29,30 | |
| 46 | 12.3 | The Dot Product | p.784: 1,2,3,5,7,9 | |
| 47 | 12.3 | Dot Product (continued) | p.784: 15,17,23,25,35,37, 41 ,45,47 | Proof: # 41 |
| 48 | 12.4 | The Cross Product | p.792: 1,3,5, 13 ,14,16 | |
| 49 | 12.4 | Cross Product (continued) | p.792: 17,19,29,39,40,41 | |
| 50 | 12.5 | Equations of Lines | p.802: 2,3,4,7,10,11,16 | |
| 51 | 12.5 | Equations of Planes | p.802: 1,23,25,27,31, 39,46,49 | |
| 52 | 12.5 | Lines and Planes | p.803: 59,67,69,71,74 | |
| 53 | 13.1 | Vector Functions & Space Curves | p.822: 1,6,7-14,15,19-24,41 | |
| 54 | 13.2 | Derivs. & Integrals of Vect Fns | p.828: 1,3,5,9,19,21,29,31,33,39 | |
| 55 | Review | | | |
| 56 | Review | | | |
| 57 | Test 4 | | | |
| 58 | Review | for common final | | |
| 59 | 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) is 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, 11 Jan will follow a Monday schedule. The last day of classes is Tuesday 3 May. There’s a Review & Study day scheduled for Wednesday 4 May. There are 59 class days in both the MWRF and in the MTWF schedule. The Final Exam period is 5 May - 12 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 “gateway” quiz on integration. For a sample and explanation see:
<http://www.usna.edu/MathDept/website/local/courses/gateways/gateways.html>