Syllabus and Problem List for Math 135, large lectures; Fall, 1997

Text *Calculus of a Single Variable: Early Transcendental Functions*, 1995, D. C. Heath, by Roland Larson, Robert Hostetler, and Bruce Edwards

Lecture	Reading	Topics	Problems
1	P.1	The Cartesian Plane	3,7,10,15,27–30,33,35,37,42,43,47,53,57
	P.2	Graphs of Equations	1,5,7,11,19,21,39,45,61,65
2	P.3	Lines in the Plane	1,3,5,7,9,15,18,19,23,29,36,41,45,49,55,67
	P.4	Functions	3,5,7,8,13,14,17,20,25,27,29,39,45,47,55,56,60,67,69,72,73
3	P.5	Review of Trig. Functions	5,6a,7,10,13,15,17,21,25,31a,33a,35,37,45,47,53,61,62,67,75,79
	P.6	Inverse Functions (Start)	1,5,9,17,25,31,35,39,53,59,61,63,71,73,75,77,89,91,97,103,113
4	P.6	Inverse Functions	(continued from above)
	P.7	Exponential & Log. Functions	1,3,5,9,17,19,25,27,31,33,35,37,45,47,51,59,67,69,72,74
5	1.1	A Preview of Calculus	
	1.2	An Introduction to Limits	1,7,9,11,13,15,17,19,21,23,27,33,34,35
6	1.3	Properties of Limits	1,3,9,11,17,23,27,29,31,33,40
	1.4	Techniques for Evaluating Limits	3,11,13,15,26,29,33,37,39,40,41,47,55
7	1.5	Continuity & One-Sided Limits	1,3,5,7,9,11,15,17,19,21,31,34,35,39,41,49,51,71,73
	1.6	Infinite Limits	1,3,5,11,15,23,25,29,31,37,41
8	2.1	The Derivative & Tangent Lines	1,9,13,15,19,21,23,27–32,37,43,47,51
9	2.2	Differentiation; Rates of Change	1a,1d,9,13,15,17,23,25,31,33,39,45,47,51,53,57,77,81,83
10	2.3	Products & Quotients; Higher Derivs.	15,21,23,27,31,33,37,43,51,53,57,59,69,79,82,87,90
11		**First exam at the regular class meeting time & place**	
12	2.4	The Chain Rule	1,4,7,17,21,25,29,31,41,45,51,59,65,69,71,85,91,93,101
13	2.5	Implicit Differentiation	1,7,11,18,25,26,29,33,35,37,43,47
	2.6	Related Rates (Start)	3,5a,9a,11a,13,17,21,24,25,28,29,33,41,47
14	2.6	Related Rates	(continued from above)
15	3.1	Extrema on an Interval	1,5,7,9,11,17,19,23,29,33,35,37
	3.2	Rolle's Theorem; Mean Value Theorem	1,2,3,9,11,17,23,27,35,43
16	3.3	Monotonicity & First Deriv. Test	3,5,11,15,19,25,29,35,43,45,49
17	3.4	Concavity & Second Deriv. Test	3,5,6,7,11,17,19,21,25,37,41,51,54,57
18	3.5	Limits at Infinity	1,3,5,7,9,13,19,25,27,31,35,37,39,53
	3.6	Summary of Curve Sketching (Start)	9,11,17,19,24,26,29,33,37,61,67
19	3.6	Summary of Curve Sketching	(continued from above)
20	3.7	Optimization Problems (Start)	3,7,9,11,15,21,23,30,37,43
21	3.7	Optimization Problems	(continued from above)
	3.8	Newton's Method	1,3,5,15,25,29,35
22		**Second exam at the regular class meeting time & place, covering through 3.7**	
23	3.9	Differentials	3,9,11,19,21,27,28,34,39
24	4.1	Antiderivatives; Indefinite Integrals	1,7,11,13,17,19,21,25,27,31,33,41,45,47,49,51,53,55
25	4.2	Area	1,3,5,9,13,15,17,21,27,29,35,39,42,43,53
26	4.3	Riemann Sums & Definite Integrals	1,3,7,13,15,19,21,23,29
27	4.4	The Fundamental Theorem of Calculus	5,7,11,19,21,23,25,27,31,33,39,43,47,49,63,71,79,81
28	4.5	Integration by Substitution	1,3,5,9,13,15,17,19,35,39,41,49,53,55,61,69,71,76,77,89,90a,90b

Final Exam, Thursday, December 18, 4 to 7 PM, location to be announced.

Graphing calculators may be used on exams but calculators and computers with QWERTY keyboards or symbolic differentiation and integration programs are not allowed. Students may bring one sheet of paper containing notes (using both sides!) up to 8.5 by 11 inches in size to any exam.
Review problems and other general information regarding this course can be found on the web page

`http://math.rutgers.edu/~greenfie/currentcourses/math135/math135_index.html`

which you may wish to bookmark.