Spring 2007 Math 31L Syllabus

Textbook: Calculus (4th ed), by Hughes-Hallett, et al.

Day	Section	Topic	Homework
1-1	1.2	Exponential Functions	1.2/5,6,11,15,17,18,20,23-26,29,31,32,35-38.
Lab:	Risk Factors for Breast Cancer		
1-2	1.3,1.4	Inverses/Logarithms	1.3/14,18,21,23,24,27,42-47,49,52,54; 1.4/1,2,4,7,9,10,19,25,29,36,39,40,42,45,46.
2-1	*Martin Luther King, Jr., holiday*		
2-2	2.1	Measuring speed	2.1/2,6-15.
Lab:	Log plots		
2-3	2.2	Derivative at a point	2.2/2,6-9,17,20,33,34,37,39,40.
3-1	1.7,1.8	Limits	1.7/17,20; 1.8/1,17,18,19,21,30,31,32,34-38; 2.2/28,29.
3-2	2.3	The Derivative Function	2.3/1-3,5,8,13,14,21,28-30,32,33,35.
Lab:	Strategies for Buying Stock		
3-3	3.9	Linear Approximations	3.9/3,11,12,19,24,25.
4-1	2.4	Interpretations of the Der.	2.4/1-3,5,10,14,16,18.
4-2	2.5	Second Derivative	2.5/1-3,7-12,14,16,17,18,21.
Lab:	Introduction to Euler's Method		
4-3	2.6	Differentiability	2.6/1-3,6-10,12,13,15; 1.8/52.
5-1	3.1	Power Functions & Polynomials	3.1/1,2,4,5,7,8,10,11,16,19-21,28,33,43, 44,53,54,56,58,61,63,65,66,70.
5-2	3.2	The Exponential Function	3.2/1,6,16,17,20,23,37,38,40,42-44,46.
Lab:	First & Second Derivatives and Roots		
5-3	3.3	Product and Quotient Rules	3.3/1,2,4,5,12,17,18,21,22,30,41-45,50,53,55,57,58,61; begin day 6-2 review problems.
6-1	3.4	Chain Rule	3.4/1,3,12,13,19,20,31,38,50,61,63,65,69,70,72,78.
6-2	*Review*		p58/12,19,22,24-26,36,38,39,46,50,52; p103/2,3,8-10,12,16-18,21-23,28,31.
Lab:	Test #1		
6-3	1.5	Trig review	1.5/13,18,19,28-31,36,38,39,42,47.
7-1	3.5	Der. of Trig Functions	3.5/4,5,9,11,14,16,18,25,27,31,33,41,42,44,47,48.
7-2	3.6	Chain Rule & Inverse Fnctns	3.6/1,2,5,6,8,11,15,16,18,23,40,41,43-46,54,64.
Lab:	Newton's Law of Motion: An Introduction to Differential Equations		
7-1	3.7	Implicit Functions	3.7/1,2,11,12,22-24,29,30,34,35.
8-1	*Course Pk*	Differential Equations	Course Pack p75/1a,c,e,2a,b,c,3a,c,4a,c,5,10a,b,13.
8-2	*Course Pk*	Differential Equations	Course Pack p75/3b,d,4b,9,10c,20,21.
Lab:	Chemical Rate Equations		
8-3		Chem lab completion	

9-1	4.6	Related rates	4.6/19-25,27,29.
9-2	4.7	L'Hôpital's Rule	4.7/1-3,5,11-16,26-28.
Lab:	Gateway test		
9-3	4.1	Using f' and f''	4.1/10,14,18,20,28-30,32,34,42,44,46; begin day 11-2 review problems.
10	*Spring Break*		
11-1	4.3	Optimization	4.3/4,5,13-15,18,19,22,33,35,37-38.
11-2	*Review*		p159/70,82-84,95-97,99-101,105a; p229/3,6,8,22,37,38, 40,46; Course Pack p76/4d,10c,15.
Lab:	Test #2		
11-3	4.4,4.5	More Optimization; Econ.	4.4/4,8,11,12,20; 4.5/4,16-20,23,29,32,34.
12-1	5.1	Distance from Velocity	5.1/7,8,15,16,25,26;5.3/15,35.
12-2	5.2	The Definite Integral	5.2/2,5,6,22,25,27,29,31,32.
Lab:	Riemann Sums		
12-3	5.3	FTC	5.3/1-3,8,13,14,17,20,22,34;5.4/2,3,26,34.
13-1	5.3,5.4	Averaging and Prop. of Integrals	5.3/9,12,24,27,28; 5.4/14-19,27,31.
13-2	6.2,6.3	Antiderivatives, Diff. Eqns.	6.2/2,4,6,8,10-12,15,16,18,19,22,28,34,40,54,55,57, 58,69-71,73,82,83; 6.3/11,12,16,17,21-23.
Lab:	Varying Density		
13-3	6.4	FTC II	6.4/1,3,4,6,8,9,11,12,15,17-23.
14-1	11.2	Slopefields	11.2/3-5,8-10;11.5/4 .
14-2	11.3	Euler's Method	11.3/2,3,4,6,7,9.
Lab:	Gateway makeup		
14-3	11.4	Separation of Variables	11.4/2,5,9,12,16,17,21,22,25,34; 11.5/3,15,21,24.
15-1	11.6	Applications and modeling	11.6/2,9,11-14,18,19,21.
15-2	11.7	Population models	11.7/1,3,4-7,9-11.
Lab:	Net Worth of a Company		
15-3	Review		p272/1,4,6,8,9,14,15,18,22,27,29,32,33,35,36,38,44,45; p306/34,45,47,49,59-61; p218/6,8; p595/2,9,17,31,32.
16-1	Test #3		
16-2	*TCE Day*		