

**Instructor.** Professor Kenneth M. Golden, JWB 303, 581 - 6176, golden@math.utah.edu

**Office Hours.** Monday 12:30 pm – 1:30 pm, Wednesday 11:45 am – 12:30 pm, by appointment, or drop by anytime.

**Text:** *Calculus*, 8th Ed., D. Varberg, E. J. Purcell and S. E. Rigdon

**Course Description.** Mathematics 1220 is a continuation of the study of differential and integral calculus begun in 1210, focusing on applications. Topics include transcendental functions, techniques of integration, improper integrals, infinite sequences and series, Taylor series, numerical methods and approximations, and differential equations.

January	4-11	7.1-7.2	Logarithms and inverse functions	
	14-18	7.3-7.5	Exponential functions and growth	
	22-25	7.6-7.8	1 <sup>st</sup> order DE's and special functions	
February	18-1	8.1-8.3	Techniques of integration	EXAM I (February 1)
	2-26		OLYMPIC BREAK	
March	27-1	8.4-8.5	More techniques of integration	
	4-8	9.1-9.4	L'Hôpital's rule, improper integrals	
	11-15	10.1-10.3	Infinite sequences and series	
April	18-22	10.4-10.5	Convergence tests	EXAM II (March 22)
	25-29	10.6-10.8	Power series	
	1-5	11.1-11.2	Taylor polynomials and integration	
May	8-12	11.3-11.5	Solving equations numerically	
	15-19	12.6, 12.8	Polar coordinates	EXAM III (April 19)
	22-26	18.1-18.2	Differential equations	
	29-1	18.3	Applications	
	6		10:30 AM – 12:30 PM	FINAL EXAM

**Grading Policy.** Grades are based on the following: your two best scores on three in-class exams ( $\approx 50\%$ ), the final exam ( $\approx 25\%$ ), and WeBWorK and computer programming assignments ( $\approx 25\%$ ). You may bring one sheet of paper, and any calculator or computer to any exam. Grades are kept by Eileen Collins, JWB 231, 585-6036, collins@math.utah.edu.

**Computers.** You are strongly encouraged to use computers to help learn and enhance the material, as well as to solve and check the problems of the course. Maple, Mathematica, and Matlab have many capabilities, such as performing the basic operations of algebra and calculus, and are particularly well suited to visualization and graphics. These capabilities will be illustrated in the computer programming assignment.

**Weekly Homework.** The assignments below will not be turned in, but you are responsible for knowing how to do the problems. Similar ones will appear on the exams, and some will appear on WeBWorK assignments.

Week	Section	Problems
1.	7.1	#1-33 odd, 36, 38, 39, 46, 49
	7.2	#1-25 odd, 30,
2.	7.3	#1-41 odd, 38, 42, 44, 48, 52, 53
	7.4	#1-33 odd, 37, 38, 41, 45
	7.5	#1-27 odd, 24, 26-28, 31
3.	7.6	#1-13 odd, 19, 24, 25
	7.7	#1-47 odd, 77
	7.8	#1-53 odd
4.	8.1	#1-67 odd
	8.2	#1-31 odd
	8.3	#1-31 odd
5.	8.4	#1-51 odd, 55, 81
	8.5	#1-33 odd, 41-43
6.	9.1	#1-21 odd, 10, 18, 23-26
	9.2	#1, 3, 7, 15, 17, 21, 23, 27, 29, 30, 37, 39, 41-43
	9.3	#1-23 odd, 27, 33-36
	9.4	#1-29 odd, 38, 39, 43, 46, 47, 51-53
7.	10.1	#1-35 odd, 34, 43, 44, 47, 52, 54-57
	10.2	#1-13 odd, 8, 21, 25, 27, 30, 31, 38
	10.3	#1-29 odd, 33
8.	10.4	#1-33 odd, 41-46
	10.5	#1-31 odd, 42, 43
9.	10.6	#1-17 odd, 27, 28
	10.7	#1-29 odd, 32, 33-35
	10.8	#1-33 odd, 34
10.	11.1	#1-17 odd, 20-22, 25, 27, 33, 35
	11.2	#1-13 odd, 31
11.	11.3	#1-9 odd, 15
	11.4	#1-13 odd
	11.5	#1-17 odd
12.	12.6	#1-27 odd, 37, 38
	12.8	#1-5 odd
13.	18.1	#1-21 odd, 20, 24-26
	18.2	#1-17 odd, 24
14.	18.3	#1-13 odd, 14-18