Math 1225 Syllabus - SPRING 2020 (Revised 3/30/2020)						
Week		**Day**	**Section**	**Topic**	**Textbook**	**WebAssign (for Reference)**
Week 1	Jan 20-24	1		Martin Luther King Holiday (No Class)		
		2	2.1	The Tangent and Velocity Problems	p. 82 # 3a: ii,iv,vi,viii,b,c	# 1, 5, 8
		3	2.2	The Limit of a Function (limits using numerical approximations, graphs, one-sided limits)	p. 92 # 1, 3, 11, 15, 16	# 6, 7, 9
		4	2.2	The Limit of a Function (Infinite Limits, VA)	p. 94 # 32, 33, 38, 41, 42, 43, 44a, 52, 54. p. 166 T/F #15 Find the V.A. (s) of f(x) = $(x^2+ 5x+6)/(x^2+ 2x-3)$	# 31, 40
Week 2	Jan 27-31	1	2.3	Calculating Limits Using the Limit Laws (Limit Laws, Factoring, Rationalizing)	p. 102 # 10, 16, 19, 26, 27, 29, 51, 59, 60, 62, 65 p. 169 # 2 p. 166 T/F # 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	# 1, 2, 9, 11, 13, 21
		2	2.3	Calculating Limits Using the Limit Laws (Absolute Values, Sandwich Theorem)	p. 103 # 37, 39, 40, 42, 45, 46, 47, 50 p.170 # 3 Find $\lim_{x\to 2^-} \|2x^2+10x-28\|/(x-2)$	# 41, 49, 52
		3	2.4	The Precise Definition of a Limit (Limits at Finite Values)	p. 114 # 12, 13a, 14 (using a graph only) Supplementary Problems (2.4a)	# 1, 2, 3, 4, 11
		4	2.4	The Precise Definition of a Limit (Infinite Limits)	Supplementary Problems (2.4b)	Limit Simulator
Week 3	Feb 3-7	1	2.5	Continuity (Left/Right Continuous, Functions Continuous on Their Domains)	p. 124 # 6, 18, 20, 21, 48 Supplementary Problems (2.5) p. 166 T/F # 25, 26	# 20, 43
		2	2.5	Continuity (Continuous Extensions, Continuity of Piecewise Functions)	p. 125 # 40, 41, 42, 43, 45, 46, 47	# 46
		3	2.5	Continuity (IVT)	p. 125 # 50, 52, 53, 56, 57a, 69 p. 166 T/F # 18, 24 p. 167 # 8 p. 170 # 8	None
		4	2.6	Limits at Infinity; Horizontal Asympotes	p. 137 # 4, 6, 9, 18, 23, 24, 28, 35, 38, 52, 55, 58, 59, 65a, 67 p. 166 T/F # 13, 14	# 3, 17, 51, 68
Week 4 **Test 1 W**	Feb 10-14	1	2.7	Derivatives and Rates of Change	p. 148 # 5, 11, 13, 17, 21, 22, 34, 37, 38, 42 p. 166 T/F # 21	# 7, 11, 44, 47, 53, 57
		2	2.8	The Derivative as a Function & Review	p. 162 # 23, 26, 29, 34a, 40, 42, 48, 49, 50, 57, 64, 65 p. 166 T/F # 22, 23 p. 168 # 49	# 1, 3, 5, 9, 26, 41
		3	3.1	Derivatives of Polynomials and Exponentials	p. 180 # 14, 20, 25, 31, 32, 55, 57, 59, 66, 67, 76, 77, 81 p. 266 T/F # 1, 6, 7, 8, 11, 14, 15	# 4, 11, 19, 23, 37, 46, 47, 48, 52
			3.2	The Product and Quotient Rules	p. 188 # 3, 6, 17, 18, 25, 29, 34, 45, 46, 48, 61 Find a formula for the nth derivative of f(x) = e^{-x}. Find a formula for the nth derivative of f(x) = xe^{-x}. p. 266 T/F # 2, 13	#3, 11, 26, 30, 41, 43, 49, 57
Week 5	Feb 17-21	1	3.3	Special Trig Limits & Derivatives of Trigonometric Functions	p.196 # 4, 7, 13, 18, 23, 31, 32, 33 (on [0,2π]), 35, 37, 39, 41, 42, 44, 46, 48, 50 and $\lim_{x\to 0} 3x*\cot(5x)$ p. 271 # 5	# 5, 7, 9, 22, 29, 39, 51
		2	3.4	The Chain Rule	p. 204 # 4, 5, 27, 28, 30, 33, 35, 36 p. 266 T/F # 3, 4, 5	# 1, 7,11, 19, 37, 41, 46
		3	3.4	The Chain Rule	p. 205 # 59, 61, 65, 74, 77, 87, 88, 98a,b p.271 # 5, 18, 20 p. 266 T/F # 9, 10, 12	# 50, 63, 71, 85, 86
		4	3.5	Implicit Differentiation	p. 215 # 10, 16, 20, 21, 25, 31, 36, 39, 42b, 74a	# 5, 11, 15, 23
Week 6	Feb 24-28	1	3.5	Implicit Differentiation (Inverse Trig Derivatives)	p. 216 # 50, 53, 57, 58, 63	# 17, 51, 55
		2	3.6	Derivatives of Logarithmic Functions	p. 223 # 7, 21, 22, 25, 30, 34, 37	# 2, 3, 4, 6, 8, 19, 26
		3	3.6	Derivatives of Logarithmic Functions (Log Diff)	p. 223 # 38, 40, 45, 49, 50, 52	# 43
		4	3.7	Rates of Change in the Natural and Social Sciences (Particle Motion)	p. 233 # 6, 10 p. 268 # 88, 89	# 1, 5, 7, 8
Week 7	Mar 2-6	1_D	3.9	Related Rates	p. 249 # 2, 12, 16, 17, 48	# 4, 9, 13
		2	3.9	Related Rates	p. 249 # 19, 24, 25, 30, 41	# 20, 33, 40
		3	3.10	Linear Approximations and Differentials	p. 256 # 2, 10, 23, 28, 32a, 34a, 35, 36, 44, **M1**	# 2, 5, 13, 15, 40
		4		Test 1 Day Off		
				Spring break (Mar 9-20)		

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Week		**Day**	**Section**	**Topic**	**Textbook**	**WebAssign (for Reference)**
Week 8	Mar 23-27	1	4.8	Newton's Method	p. 348 # 3, 5, 11, 16, 31, **M2**	# 10, 15
Test 2		W		**Test 2:** Multiple Choice from W 3/25: 7-7:30pm EST Free Response from W 3/25: 7:30pm - R 3/26: 7:30pm EST	Sections 2.8, 3.1-3.7, 3.9	
		2	4.1	Maximum and Minimum Values	p. 283 # 10, 11, 28, 34, 39, 47, 76, 80 p. 358 T/F # 1, 2, 3	# 5, 31, 37, 44, 48, 53, 69, 70
Week 9	Mar 30-April 3	1	4.2	The Mean Value Theorem	p. 291 # 3, 6, 9, 10, 12, 13, 17, 19, 21, 26, 27, 37, 38 p. 358 T/F # 4	# 5, 7, 11, 36
		2	4.3	How Derivatives Affect the Shape of a Graph (1st Derivative Test/ Increasing & Decreasing, Concavity/POI)	p. 300 # 1ab, 8ab, 9ab, 13ab, 17ab, 37ab p. 300 # 7, 17c, 23, 24, 26, 33	# 5 # 1, 2, 9, 13, 35
Week 10	April 6-10	1	4.5	Summary of Curve Sketching	p. 321 #12, 14, 34, 48, $y = (x^2-4)/(x^2+4)$, $y = e^x/(1-e^x)$ p. 358 T/F # 5, 6, 7, 8, 9, 10	None
		2	4.7	Optimization Problems	p. 335 # 5, 15, 21, 29 p. 338 # 34, 35, 48, 54, 65, 72	# 3, 7, 13, 23
		3	4.9	Antiderivatives (Rules, Differential Equations)	p. 355 # 2, 5, 8, 10, 11, 12, 16, 17, 20, 22, 46, 51 p. 356 # 34, 48, 49, 53, 54, 59, 63, 66	# 2, 5, 7, 13, 15, 27 # 30, 37, 39, 65, 75
Week 11	April 13-17	1	5.1	Areas and Distances	p. 375 # 1, 2, 4, 8, 9 (optional), 17 p. 377 # 21*, 23*, 25, 26, 27, 28 (*Use left endpoints)	# 13, 15 # 19, 22, 24
Test 3		W		**Test 3:** Multiple Choice from W 4/15: 7-7:30pm EST Free Response from W 4/15: 7:30pm - R 4/16: 7:30pm EST	Sections 3.10, 4.8, 4.1, 4.3, Min/Max, 4.5, 4.7	
		2	5.2	The Definite Integral	p. 388 # 5, 11, 12, 17, 21, 22, 29, 34, 38, **M3** "p. 390 # 42, 43, 48, 51, 53, 55, 58, 70 p. 421 T/F # 1, 2, 3, 4, 5, 6, 7, 8"	# 1, 7, 9, 19 # 34, 35, 37, 39, 47, 49, 52
Week 12	April 20-24	1	5.3	The Fundamental Theorem of Calculus	p. 399 # 4, 7, 13, 18, 64, 65, 66, 67, 73, 84 p. 400 # 19, 25, 31, 35, 37, 39, 53, 56, 57	# 3, 7, 9, 11, 13, # 23, 69
		2	5.4	Indefinite Integrals and the Net Change Theorem	p. 409 # 1, 11, 16, 17, 29, 33, 36, 37 p. 409 # 44, 46, 47, 53, 54, 61, 64	# 5, 6, 8, 9, 12, 16 # 51, 59, 62, 66
		3	5.5	The Substitution Rule	p. 418 # 9, 18, 31, 36, 40, 48 p. 419 # 56, 60, 66, 69, 71, 77, 79, 84, 87 p. 421 T/F # 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	# 3, 4, 5, 9, 13, 23, 28 #50, 55, 59, 62, 67, 81
Week 13	April 27-May 1			Review		
Test 4		W		**Test 4:** Multiple Choice from W 4/29: 7-7:30pm EST Free Response from W 4/29: 7:30pm - R 4/30: 7:30pm EST	Sections 4.9, 5.1-5.5	
Week 14	May 4-6			Review		
				Review		
Final Exam		T		**Tues, May 12, Final Exam** Multiple Choice: T 5/12 7:00-8:30pm EDT Free Response: M 5/11 7:00pm-W 5/13 10:00am EDT		

Note: M1, M2 and M3 are MATLAB assignments. This semester these are not required