Math 1225 Syllabus - SPRING 2024

***Calculus: Early Transcendentals*, 9th Edition, by James Stewart, with WebAssign Access**

Week		Day	Section	Topic	Textbook	WebAssign (for Reference)
Week 1	Jan 15-19	1		MLK Day		
		2		Introduction to Calculus		
		3	2.2	The Limit of a Function (limits using numerical approximations, graphs, one-sided limits)	p. 92 # 1, 2, 11, 15, 16	# 6, 7, 9
		4	2.2	The Limit of a Function (Infinite Limits, VA)	p. 94 # 3, 30, 31, 33, 36, 37, 40, 42a, 51 Find V.A.(s) of f(x) = (x^2+5x+6)/(x^2+2x-3)	# 31, 37, 40
Week 2 Test 0	Jan 22-26	1	2.3	Calculating Limits Using the Limit Laws (Limit Laws, Graphical Limits)	p. 103 #52, 61, 62, 64 p. 167 T/F # 1-3, 6-9, 11	# 1, 2, 53
		2	2.3	Calculating Limits Using the Limit Laws (Factoring, Trig Limits, Rationalizing) *Note trig limits can be found in Section 3.3	p. 103 #10, 16, 19, 29, 31 p.198 #45, 52, 54, 60 p. 167 T/F # 4, 5, 10	2.3: # 2, 13, 15, 23 3.3: # 45, 51, 60
		3	2.3	Calculating Limits Using the Limit Laws (Absolute Values, Squeeze Theorem)	p. 103 # 39, 41, 42, 44, 45, 47, 48, 49 p.171 # 3	# 43, 51, 54
		4	2.5	Continuity (Left/Right Continuous, Functions Continuous on Their Domains)	p. 124 # 9, 20, 22, 23, 50 p. 167 T/F # 24, 25	# 6, 12, 22
			W	**Test 0 [Sections 2.2, 2.3 (Day 1 & Day 2)]**		
Week 3	Jan 29 - Feb 2	1	2.5	Continuity (Intermediate Value Theorem)	p. 126 # 52, 54, 55, 58, 70 p. 167 T/F # 17, 23 p. 168 # 34; p. 172 # 8	# 57, 63
		2	2.5	Continuity (Continuous Extensions, Continuity of Piecewise Functions)	p. 125 # 42, 44, 47, 48, 49 Supplementary Problems (2.5)	# 45, 48
		3	2.6	Limits at Infinity; Horizontal Asympotes	p. 137 # 4, 8, 18	# 3, 17, 51
		4	2.6	Limits at Infinity; Horizontal Asympotes	p. 137 #25, 26, 30, 36, 52, 55, 58, 59, 65a p. 167 T/F # 12, 13	# 67, 68
Week 4	Feb 5-9	1	2.7	Derivatives and Rates of Change	p. 149 # 5, 8, 13, 18, 34, 36, 43, 44 p. 167 T/F # 20	# 8, 11, 15, 17, 36, 51, 55
		2	2.8	The Derivative as a Function & Review	p. 163 # 23, 29, 32, 40, 42, 49, 57, 65 p. 167 T/F # 21, 22 p. 170 # 51	# 3, 16, 41
		3	3.1	Derivatives of Polynomials and Exponentials	p. 181 # 10, 21, 22, 25, 28, 29, 41, 59, 61, 63, 70, 80, 81, 85 p. 269 T/F # 1, 6, 7, 11, 14, 15	# 12, 21, 33, 41, 50, 51, 56, 70
		4	3.2	The Product and Quotient Rules	p. 188 # 6, 10, 23, 24, 29, 31, 37, 47, 48, 50, 63 p. 269 T/F # 2, 13	# 7, 17, 30, 33, 45, 51, 59
Week 5 Test 1	Feb 12-16	1	M	**Test 1 [Sections 2.2, 2.3, 2.5, 2.6, 2.7, 2.8]**		
		2	3.3	Derivatives of Trigonometric Functions	p.197 # 4, 9, 19, 24, 29, 38, 39 (on [0,2π]), 45, 49, 52, 54, 56, 58, 60	# 7,15, 29, 61
		3	3.4	The Chain Rule	p. 206 # 3, 5, 29, 30, 32, 35, 38, 43	# 6, 7, 13, 22, 41, 51,
		4	3.4	The Chain Rule	p. 207 # 65, 67, 71, 80, 83, 92, 93, 98a,b p. 275 # 18, 20 p. 269 T/F # 9, 10, 12	# 69, 77, 91
Week 6	Feb 19-23	1	3.5	Implicit Differentiation	p. 215 # 10, 14, 20, 26, 27, 35, 40, 43, 62a	# 5, 15, 21, 25, 61
		2	3.5	Implicit Differentiation (Inverse Trig Derivatives) *Note that we will cover Inverse Trig Derivatives in Section 3.5 rather than 3.6.	p. 224 # 64, 66, 75, 76, 81	p. 224 # 63, 65, 73
		3	3.6	Derivatives of Logarithmic Functions	p. 224 # 13, 25, 26, 31, 36, 40, 43, 44 p. 269 T/F # 8	# 4, 5, 6, 8, 21, 26, 32
		4	3.6	Derivatives of Logarithmic Functions (Log Diff)	p. 224 # 46, 50, 51, 54, 56, 58	# 49, 57
Week 7	Feb 26-Mar 1	1	3.9	Related Rates	p. 251 # 4, 12, 16, 17	# 6, 9, 12, 13, 50
		2	3.9	Related Rates	p. 251 # 18, 25, 26, 30, 32, 43	# 18, 25, 35, 42, 45
		3	3.10	Linear Approximations	p. 258 # 4, 10, 31, 36, 40a, 52	# 5, 31, 36, 40
		4				
Spring Break						
Week 8		1	4.8	Linear Approximations and Newton's Method	p. 354 # 3, 11	# 4, 10, 12

	Mar 11-15	2	4.8	Newton's Method	p. 354 # 5, 15, 31	# 13, 27
		3	4.1	Maximum and Minimum Values	p. 286 # 10, 11, 28, 34, 41, 51, 82 p. 364 T/F # 1, 2, 3	# 5, 30, 39
		4	4.1	Maximum and Minimum Values	Supplementary Exercises	#57, 59, 63, 73, 74
Week 9 **Test 2**	Mar 18-22	**1**	**M**	**Test 2 [Sections 3.1-3.6, 3.9, 3.10, 4.8]**		
		2	4.2	The Mean Value Theorem	p. 295 # 3, 10, 13, 14, 23, 25, 41, 42 p. 364 T/F # 4	# 9, 10, 13, 23, 25
		3	4.2	The Mean Value Theorem	p. 296 # 16, 17, 21, 30, 31	# 16, 18, 40
		4	4.3	What Derivatives Tell Us about the Shape of a Graph (1st Derivative Test/ Increasing & Decreasing)	p. 305 # 8ab, 9, 15, 16	# 5, 15
Week 10	Mar 25-29	1	4.3	What Derivatives Tell Us about the Shape of a Graph (Concavity/POI)	p. 305 # 7, 20, 33, 34, 36, 45, 88	# 23, 28, 32, 33, 43
		2	4.5	Summary of Curve Sketching Note: Slant asymptotes are not covered.	p. 327 #11,12, 14	None
		3	4.5/3.7	Summary of Curve Sketching and Rates of Change in the Natural and Social Sciences (Particle Motion only)	p. 327 #34, 44, 48 p. 365 T/F # 5, 6, 7, 8, 9, 10	4.1: # 23, 27 4.5: #24, 55
		4	3.7	Rates of Change in the Natural and Social Sciences (Particle Motion only)	p. 235 # 6, 7, 8, 12 p. 271 # 93	# 1, 5, 7, 8, 9, 10
Week 11	Apr 1-5	1	4.7	Optimization Problems	p. 342 # 5, 19, 25, 33	# 3, 7, 13, 27
		2	4.7	Optimization Problems	p. 342 # 40, 41, 54, 60, 71, 78	# 40, 54
		3	4.9	Antiderivatives (Rules and Differential Equations)	p. 361 # 1, 6, 9, 10, 12, 13, 16, 19, 20, 21, 22, 26, 40, 52, 54, 55, 57, 59, 60, 65, 68, 72	# 6, 9, 11, 15, 17, 33, 36, 43, 45, 71, 81
		4	5.1	Areas and Distances	p. 381 # 1, 2, 4, 7, 8, 13	# 9, 11
Week 12 **Test 3**	Apr 8-12	**1**	**M**	**Test 3 [Sections 4.1, 4.2, 4.3, 4.5, 3.7, 4.7]**		
		2	5.1	Areas and Distances (sigma notation/limits)	p. 383 # 16*, 18*, 22, 23, 24 (*Use left endpoints)	# 15, 19, 22
		3	5.2	The Definite Integral	p. 394 # 5, 13, 14, 19, 25, 29, 32, 36, 46	# 1, 7, 12, 21
		4	5.2/5.3	The Definite Integral The Fundamental Theorem of Calculus, Part 1	p. 396 # 52, 53, 58, 61, 63, 65, 68, 80 p. 406 # 4, 9, 15, 20	5.2: # 26, 36, 39, 45, 57, 59, 62 5.3: # 3, 9, 13, 15, 17
Week 13	Apr 15-19	1	5.3	The Fundamental Theorem of Calculus, Part 2	p. 406 # 21, 41, 45, 47, 49, 70, 73, 83, 94	# 29, 52, 79, 84
		2	5.4	Indefinite Integrals and the Net Change Theorem	p. 415 # 3, 14, 15, 22, 35, 45, 46, 52, 54, 55, 61, 62, 71, 74	# 10, 13, 15, 22, 59, 64, 69, 72, 76
		3	5.5	The Substitution Rule	p. 425 #10, 22, 35, 42, 46, 54	# 3, 15, 27, 31, 40, 50
		4	5.5	The Substitution Rule	p. 425 # 62, 66, 72, 75, 77, 83, 85, 90, 93	# 61, 65, 68, 73, 87
Week 14 **Test 4**	Apr 22-26	1		Review & Catch Up	p. 428 T/F # 1-20	
		W	**W**	**Test 4 [Sections 4.9, 5.1-5.5]**		
		3		Final Exam Review 1		
Week 15	Apr 29-May 1	1		Final Exam Review 2		
		2		Final Exam Review 3		
Final Exam		**Wed**		**May 8th 7:45AM - 9:45AM**		