Date	Day	Lecture No	Topic	Comments	Reading
3-8-2022	W	1	Introduction		
5-8-2022	F				
8-8-2022	M	2	Linear Algebra Concepts	Online Class	
10-8-2022	W	3	Probability Concepts	Online Class	
12-8-2022	F				
15-8-2022	M		No Class	Independence Day	
17-8-2022	W	4	Least Squares Problems		NW Ch 10
19-8-2022	F	5	Least Squares Problems		NW Ch 10
22-8-2022	M	6	Introduction to Neural Networks		AG
24-8-2022	W	7	Introduction to Neural Networks, Backprop		AG
26-8-2022	F	8	Tutorial on Neural Networks with Tensor Flow		FC
29-8-2022	M	9	Backprop, Gradient Descent		NW Ch 3
31-8-2022	W		No Class	Ganesh Chaturti	
2-9-2022	F				
5-9-2022	M	10	Gradient Descent		NW Ch 3
7-9-2022	W	11	Variants of Gradient Descent		RM 1
9-9-2022	F		**Quiz 1**		
12-9-2022	M	12	Conjugate Gradient		NW Ch 5, RM 2
14-9-2022	W	13	Conjugate Gradient		NW Ch 5, RM 2
16-9-2022	F				
19-9-2022	M	14	Quasi-Newton		NW Ch 6
21-9-2022	W	15	Quasi-Newton		NW Ch 6
23-9-2022	F				
26-9-2022	M	16	Trust Region Methods		
28-9-2022	W		Study Break		
30-9-2022	F		**Mid-Term Exam on Unconstrained Optimization**		
3-10-2022	M		No Class	Puja Break	
5-10-2022	W		No Class	Dusserha	
7-10-2022	F				
10-10-2022	M	17	Regularization as a constrained optimization problem		NW Ch 12
12-10-2022	W	18	Theory of Constrained Optimization		NW Ch 12
14-10-2022	F				
17-10-2022	M	19	Linear Programming		NW Ch 13
19-10-2022	W	20	Linear Programming		NW Ch 13
21-10-2022	F				
23-10-2022	M	21	Linear Programming		NW Ch 13
26-10-2022	W	22	Quadratic Programming, Support Vector Machines		NW Ch 16, AG
28-10-2022	F				
30-10-2022	M	23	Quadratic Programming - Active Set Method		NW Ch 16,18
2-11-2022	W	24	Study Break/Buffer		
4-11-2022	F		**Quiz 2**		
6-11-2022	M	25	Derivative Free Methods		RM 4
9-11-2022	W	26	Derivative Free Methods		

11-11-2022	F								
13-11-2022	M	27	Dynamic Programming		RM 3				
16-11-2022	W	28	Dynamic Programming						
18-11-2022	F								
20-11-2022	M	29	Reinforcement Learning	Optional	AG				
			Final Exam as Per Institute Schedule						
			Reading Material						
		NW	Nocedal and Wright	Numerical Optimization					
		AG	Aurelien Geron	Hands on ML					
		FC	Francois Chollet	Deep Learning					
		RM 1	Stochastic Gradient Methods	https://arxiv.org/pdf/1609.04747.pdf					
		RM 2	Conjugate Gradient	**a) http://www.cs.cmu.edu/~quake-papers/painless-conjugate-gradient.pdf**					
				b) https://github.com/vschaik/Conjugate-Gradient/tree/1d22484a03ba5299800cfb889a4b05d4db323736					
		RM 3	Dynamic Programming	**http://web.mit.edu/15.053/www/AMP-Chapter-11.pdf**					
		RM 4	Chapter from textbook by C Balaji						
			Grading Scheme	**Number of Items**	**Percentage of Final Score**				
		Quiz	MCQ	2	20				
		P-Set	Programming Set	3	20				
		Mid Term	Descriptive Exam	1	30				
		Final	Descriptive Exam	1	30				