Course Syllabus (tentative, subject to change)

Week	Time	Contents	Homework, Project & Finals	Remarks
Week-2-1	1/13	Course Logistics & Overview		**Remote**
Week-2-2	1/13	Introduction to mathematical optimization		
Week-3-1	1/20	Introduction to mathematical optimization		**MLK Day, no mandatory attendance**
Week-3-2	1/20	Sample examples & applications, mathematical background	HW1 Release	01/24
Week-4-1	1/27	Gradient descent method, Line search		
Week-4-2	1/27	Gradient descent method, Line search		
Week-5-1	2/03	Nesterov's acceleration, Newton's Method		
Week-5-2	2/03	Stochastic Gradient Descent	HW 1 Due, HW 2 Release	02/07
Week-6-1	2/10	Intro of nonsmooth problems, subgradient methods		

Week-6-2	2/10	Subgradient methods II		
Week-7-1	2/17	Smoothing & Moreau envelope		
Week-7-2	2/17	Proximal gradient method	HW 2 Due, HW 3 Release	02/21
Week-8-1	2/24	Accelerated proximal gradient & homotopy continuation		
Week-8-2	2/24	Augmented Lagrangian Method	Project Proposal Due	02/28
Week-9-1	3/03	**Spring Break, No Class**		
Week-9-2	3/03	**Spring Break, No Class**		
Week-10-1	3/10	Alternating Direction Method of Multipliers (ADMM)		
Week-10-2	3/10	Alternating Direction Method of Multipliers (ADMM) II	HW 3 Due, HW 4 Release	03/14
Week-11-1	3/17	Frank-Wolfe Methods		
Week-11-2	3/17	Introduction of Nonconvex Problems I		
Week-12-1	3/24	Introduction of Nonconvex Problems II		**Remote**
Week-12-2	3/24	Introduction of Nonconvex Problems & Trust-Region Method	HW 4 Due, HW 5 Release	03/28
Week-13-1	3/31	Trust-Region Method I		
Week-13-2	3/31	Trust-Region Method II		

Week-14-1	4/07	Cubic Regularization Method		
Week-14-2	4/07	Riemannian optimization I	HW 5 Due, HW 6 Release	04/11
Week-15-1	4/14	Riemannian optimization II		
Week-15-2	4/14	Riemannian optimization III		
Week-16-1	4/21	Guest Talk	TBA	