

## PHYSICS 270 - Physics Applications of Machine Learning and Data Science

Week	Tuesday	Topic		Thursday	Topic		
1				8/27/20	Introduction course overview		
2	9/1/20	Python		9/3/20	Linear Algebra - I vectors & matrices		
3	9/8/20	Linear Algebra - II eigenvalues & eigenvectors		9/10/20	Statistics - I Gaussian & least squares		
4	9/15/20	Statistics - II non-parametric statistics		9/17/20	Statistics - III stable distributions		
5	9/22/20	Optimization - I 1-D gradient descent		9/24/20	Optimization - II 2-D gradient descent		
6	9/29/20	<b>NO CLASS</b>	<b>Monday Schedule</b>	10/1/20	Optimization - III stochastic gradient descent		
7	10/6/20	Optimization - IV cost functions		10/8/20	<b>NO CLASS</b>		
8	10/13/20	Optimization - V - other methods		10/15/20	Machine Learning - I Logistic Regression		
9	10/20/20	Machine Learning - II Cleaning Data		10/22/20	Machine Learning - III Random Forest		
10	10/27/20	Machine Learning - IV - k Nearest Neighbors		10/29/20	Machine Learning - V K-means		
11	11/3/20	<b>NO CLASS</b>		11/5/20	Neural Networks - I universal approximation thm sigmoid functions		
12	11/10/20	Neural Networks - II layers		11/12/20	Neural Networks - III back propagation		
13	11/17/20	Neural Networks - IV TensorFlow		11/19/20	Neural Networks - V different architectures		
14	11/24/20	Neural Networks - VI Hopfield networks		11/26/20	<b>NO CLASS</b>	<b>College Closed</b>	
15	12/1/20	Neural Networks - VII basis from neuroscience		12/3/20	<b>NO CLASS</b>		
16	12/8/20	Class Evaluation Student Input					