Week	Lectures	Assignment/Exams	Weight
1	Introduction to Machine Learning, Supervised Learning, Classification, Regression, Overfitting, Underfitting, Bais-varaince Tradeoff		
2	Linear Regression, LR Objective, Method of Least Squares, Closed Form Solution, Polynomial Regression		
3	Gradient Descent, Logistic Regression, LoR Objective, Confusion Metrics, Accuracy, Precision, Recall, F1		
4	Dimensionality Reduction, Regularization	A1-Out (Start of the week) (with bonus task - 10% of the course final grade)	30%
5	Separating Hyperplanes, Support Vector Machines		
6	Artificial Neural Nets, Back Propogation	A1-In (End of the week)	
7	Convolutional Neural Neworks		
8	Midterm	Oral Exam (Theoretical assesment with TA)	20%
9	DNNs (State of the art techniques): Batch Normalization, Gradient Clipping, Learning Rate Scheduling, Early Stopping, Dropput, Data Augmentation, Using Pretrained Layers)	A2-Out (Start of the week) (with bonus task - 10% of the course final grade)	30%
10	Decision Trees, Random Forest		
11	Ensemble Learning, Boosting	A2-In (End of the week)	
12	Unsupervised Learning: Clustering: K-means, K-means++		
13	Unsupervised Learning: Clustering: Hierarchical Clustering, DBSCAN		
14	Generative Models		
15	**No Lecture**	**Oral Exam**	20%