APPROXIMATE SCHEDULE – SUBJECT TO CHANGE

CSCI 688 – 02, Spring 2021

No.	Date	Day	Lecture Topics	Old Lecs	Reading	Lab	Data Camp Assignment	Due	HW	Due
1	Jan 28	R	Intro to Stat. Learning, Rstudio, R, and Linear Review	1,2		Intro to R	“Introduction to R” – all “Intermediate R” – all	Feb 4	PS 1	Feb 11
2	Feb 2	T	Super/ unsuper problems, intro to Linear Reg.	3	Ch 1, 2.1, 2,2 2.3.1, 3.1-3.2.1	Linear regression in R				
3	Feb 4	R	Linear Reg. Cont.	4	Ch 1, 2.1, 2,2 2.3.1, 3.1-3.2.1	Transformations and factors				
4	Feb 9	T	KNN Reg. And Flexibility	5	2.3.2, 2.4	KNN, train/test	"Supervised Learning in R: Regression" – ch1	Feb 16		
5	Feb 11	R	Acc. & Eval.	6	2.5-2.9	KNN	"Supervised Learning in R: Regression" -ch2 “Introduction to Machine Learning” -ch4	Feb 18	PS2	Feb 25
6	Feb 16	T	BV Tradeoff	7, 8		Cross validation and				

						KNN				
7	Feb 18	R	Intro to Classif. + KNN	9	2.4	Knn classification and mcerror	“Supervised Learning in R: Classification“ – ch1: “k-Nearest Neighbors (kNN)”	Feb 25		
8	Feb 23	T	Naive bayes, Logistic Reg.	Beginning of 10, 12, beginning of 13	4.1, 4.2, 4.4	Log Reg Lab, Spec and Sens	“Supervised Learning in R: Classification” – ch2: “Naive Bayes” – ch3: “Logistic Regression”	Mar 2		
9	Feb 25	R	LDA & QDA	End of 10, 11	4.3	LDA & QDA lab			PS3	Mar 11
10	Mar 2	T	Regr. Metrics, Subset Selection	13	3.3	Regsubsets in leaps package				
	Mar 4	R	Spring Break Day							
11	Mar 9	T	Shrinkage	15, end of 16	3.4	glmnet				
12	Mar 11	R	Unsupervised and PCA	End of 16, 17		PCA Packages			PS4	Mar 25
13	Mar 16	T	PCA II	18, beginning of 19		PCA without packag	“Unsupervised Learning in R” – ch3 “Dimensionality reduction with PCA” all	Mar 25		

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14	Mar 18	R	k-means	End of 19	14.3	k-means on Iris data	“Unsupervised Learning in R” – ch 1 “Unsupervised learning in R” all	Mar 25		
15	Mar 23	T	Midterm							
16	Mar 25	R	Hierarchical clustering	20, beginning of 21	14.3	Hclust and tree cutting in R	“Unsupervised Learning in R” – ch2 “Hierarchical Clustering” all		PS5	Apr 8
17	Mar 30	T	trees	End of 21, beginning of 22	9.2,	rpart	“Tree-Based Models in R” *– ch 1-2*			
18	Apr 1	R	Ensemble learning and RFs	End of 22, 23	9.2, 8.7, CH 15	spambase and RFs	“Supervised Learning in R: Classification” – ch4: “Classification trees” “Tree-Based Models in R” *– ch 3-4*			Apr 8
	Apr 6	T	Spring Break Day							
19	Apr 8	R	Boosting I	write					PS6	Apr 22
20	Apr 13	T	Boosting II	write		Xgboost and gbm	"Supervised Learning in R: Regression" -ch5 “Tree-Based Models in R” *– ch 5*			Apr 20
21	Apr 15	R	Non-linear PCA	write						

22	Apr 20	T	Kernel PCA	write		MASS and kernlab				
23	Apr 22	R	Constrained Optimization, perceptrons	688-24					PS 7	May 6
24	Apr 27	T	Max. Margin Classifier	688-24,25						
25	Apr 29		SVMs	688-25 (688-lab 25)		e1071	“Support Vector Machines in R” – all	May 6		
26	May 4		NPR I	25, 459 prep						
27	May 6		NPR II	25, 459 prep		locpol and splines				
	May 18		Final projects presentations (7-10 PM EST)							