



SUBJECT: MACHINE LEARNING		
MASTER DEGREE: BIG DATA ANALYTICS	ECTS: 6	QUARTER: 2

TIMETABLE FOR THE SUBJECT								
WEEK	SESSION	DESCRIPTION OF EACH SESSION	GROUP (X mark)		Indicate if a different lecture room is needed (computer, audiovisual, etc.)	HOMEWORK PER WEEK		
			1	2		DESCRIPTION	ATTENDING HOURS	HOMEWORK Max. 7H/WEEK
1	1	Course Introduction				Review recommended material	1.5	1
1	2	Introduction to Python and IPython Notebooks			Computer Room	Review material Solve proposed exercises	1.5	3
2	3	Support Vector Machines (I)				Review recommended material	1.5	2
2	4	Support Vector Machines with Sklearn			Computer room	Review material Solve proposed exercises	1.5	3
3	5	Support Vector Machines (II)				Review recommended material	1.5	2
3	6	Introduction to Spark			Computer room	Review material Solve proposed exercises	1.5	3



4	7	Support Vector Machines with Spark			Computer room	Review material Solve proposed exercises	1.5	3
4	8	Support Vector Machines with Spark			Computer room	Review material Solve proposed exercises	1.5	3
5	9	Introduction to Gaussian Processes				Review recommended material	1.5	2
5	10	Gaussian Processes with GPy			Computer room	Review material Solve proposed exercises	1.5	3
6	11	Scalable Gaussian Processes and Gaussian Processes for Dimensionality Reduction				Review recommended material	1.5	2
6	12	Gaussian Processes with GPy (II)			Computer room	Review material Solve proposed exercises	1.5	3
7	13	Mixture Models and the EM algorithm				Review recommended material	1.5	2
7	14	Gaussian Mixture Models with Sklearn			Computer room	Review material Solve proposed exercises	1.5	3



8	15	Gaussian Mixture Models with Spark			Computer room	Review material Solve proposed exercises	1.5	3
8	16	Gaussian Mixture Models with Spark			Computer room	Review material Solve proposed exercises	1.5	3
9	17	Hidden Markov Models				Review recommended material	1.5	2
9	18	Hidden Markov Models with the HMMlearn library			Computer room	Review material Solve proposed exercises	1.5	3
10	19	Deep Learning (I). Backpropagation and fundamentals.				Review recommended material	1.5	2
10	20	Introduction to Deep Learning with Tensor Flow			Computer room	Review material Solve proposed exercises	1.5	3
11	21	Deep Learning (II). Convolutional Neural Networks and Image Classification.				Review recommended material	1.5	2
11	22	Image Classifier with Tensor Flow			Computer room	Review material Solve proposed exercises	1.5	3
12	23	Deep Learning (III). Recurrent Neural Networks and Sequential Deep Learning				Review recommended material	1.5	2



12	24	Language Model and Word Embeddings			Computer room	Review material Solve proposed exercises	1.5	3
13	25	Deep Learning (IV) Unsupervised Deep Learning				Review recommended material	1.5	2
13	26	Building a Generative Adversarial Network from scratch			Computer room	Review material Solve proposed exercises	1.5	3
14	27	Lab project presentations			Computer room			
14	28	Lab project presentations						