

COURSE: Introduction to Data Science		
DEGREE: Bachelor in Data Science and Engineering	YEAR: 1	TERM: 1

WEEKLY PLANNING								
WEEK	SESSION	DESCRIPTION	TEACHING (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	WEEKLY PROGRAMMING FOR STUDENT		
			L E C T U R E S	S E M I N A R S		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 6,5h)
1	1	The Importance of Data Science	x				1,66	6,5
	2	Practical class I		x	Inf		1,66	
2	3	Understanding the Data: Case Studies of Exploratory Data Analysis and Visualization Techniques I	x				1,66	6,5
	4	Practical class II		x	Inf		1,66	
3	5	2. Understanding the Data: Case Studies of Exploratory Data Analysis and Visualization Techniques II	x				1,66	6,5
	6	Practical class III		x	Inf		1,66	
4	7	Importance of a good design of the experiment and choice of performance measures: precision, sensitivity, specificity, ROC curves. Over-fitting.	x				1,66	6,5
	8	Practical class IV		x	Inf		1,66	
5	9	Introduction to unsupervised techniques: case studies of clustering I	x				1,66	6,5
	10	Practical class V		x	Inf		1,66	
6	11	Case studies of clustering II	x				1,66	6,5
	12	Practical class VI		x	Inf		1,66	

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7	13	Introduction to unsupervised classification: case studies on decision trees and random forests.	x			1,66	6,5	
	14	Practical class VII		x	Inf	1,66		
8	15	Case studies on data reduction techniques (Principal Component Analysis, Independent Component Analysis, Fisher Discriminant Analysis).	x			1,66	6,5	
	16	Practical class VIII		x	Inf	1,66		
9	17	Introduction to Regression: Case Studies of Linear Regression.	x			1,66	6,5	
	18	Practical class IX		x	Inf	1,66		
10	19	Case studies of Logistic Regression.	x			1,66	6,5	
	20	Practical class X		x	Inf	1,66		
11	21	Case studies on probabilistic models.	x			1,66	6,5	
	22	Practical class XI		x	Inf	1,66		
12	23	Introduction to the state of the art: case studies on Support vector machines.	x			1,66	6,5	
	24	Practical class XII		x	Inf	1,66		
13	25	Case studies on Deep Learning.	x			1,66	6,5	
	26	Practical class XIII		x	Inf	1,66		
14	27	Wrap-up class	x			1,66	6,5	
	28			x	Inf	1,66		
	29	Additional session				1,66	3,25	
Subtotal 1						48	94	

Total 1 (Hours of class plus student homework)						142
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15		Tutorials, handing in, etc				3,6	-
16							

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			L E C T U R E S	S E M I N A R S		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 6,5h)
17		Assessment					4	10
18								
Subtotal 2							8	10
Total 2 (Hours of class plus student homework)							18	
TOTAL (Maximun 160 horas)							160	