

<b>SUBJECT DENOMINATION: Big data for Business</b>		
<b>DEGREE:</b>	<b>Business Administration</b>	<b>COURSE: 3rd / 4th</b> <b>SEMESTER: 2</b>

**CRONOGRAM OF THE SUBJECT**

WEEK	SESSION	DESCRIPTIONS OF THE CONTENTS OF EACH SESSION	GROUP (Put an X)		Point out the space needed (classroom, audiovisual, etc.)	STUDENT WORK DURING THE WEEK		
			BIG	SMALL		DESCRIPTION	CLASS HOURS	WORKING HOURS per week (max) 7 H
1	1	Course presentation.  Chapter 1: Introduction. Introduction to the main techniques for large volume of data processing and analysis.	X			Working on the class material. Worksheet	1,5	7
1	2	Chapter 1: Introduction. Presentation of several applications in financial risk management, credit scoring or fraud detection.		X		Working on the class material. Worksheet Computational exercises.	1,5	
2	3	Chapter 2. Data collection, sampling and preprocessing. Types of data. Sampling. Data visualization tools.	X			Working on the class material. Worksheet Computational exercises.	1,5	7
2	4	Chapter 2. Data collection, sampling and preprocessing. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercises.	1,5	
3	5	Chapter 2. Data collection, sampling and preprocessing. Missing values. Outlier detection and treatment. Data transformations.	X			Working on the class material. Worksheet Computational exercises.	1,5	7
3	6	Chapter 2. Data collection, sampling and preprocessing. Theoretical and computational exercises.		x		Working on the class material. Worksheet Computational exercises.	1,5	
4	7	Chapter 2. Data collection, sampling and preprocessing. Dimension reduction.	X			Working on the class material. Worksheet Computational exercises.	1,5	7
4	8	<b>First partial exam.</b> Chapter 2. Data collection, sampling and preprocessing. Application: Risk management in the stock market.		X		Working on the class material. Worksheet Computational exercises.	1,5	

5	9	Chapter 3. Supervised learning: Regression. Linear and polynomial Regression	X			Working on the class material. Worksheet Computational exercises.	1,5	7
5	10	Chapter 3. Supervised learning: Regression. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercises.	1,5	
6	11	Chapter 3. Supervised learning: Regression. Cross-validation.	X			<b>First part of the project in group</b> Working on the class material. Worksheet Computational exercises.	1,5	7
6	12	Chapter 3. Supervised learning: Regression. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercises.	1,5	
7	13	Chapter 3. Supervised learning: Regression. Model selection and regularization methods (ridge and lasso)	X			Working on the class material. Worksheet Computational exercises.	1,5	7
7	14	Chapter 3. Supervised learning: Regression. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercises.	1,5	
8	15	Chapter 3. Supervised learning: Regression. Nonlinear models, splines and generalized additive models..	X			Working on the class material. Worksheet Computational exercises.	1,5	7
8	16	<b>Partial exam in groups.</b> Chapter 3. Supervised learning: Regression. Application: credit-scoring prediction		X		Working on the class material. Worksheet Computational exercises.	1,5	
9	17	Chapter 4. Supervised learning: Classification. Bayes classifiers	X			Working on the class material. Worksheet Computational exercises.	1,5	7
9	18	Chapter 4. Supervised learning: Classification. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercises.	1,5	
10	19	Chapter 4. Supervised learning: Classification. Logistic Regression	X			<b>Second part of the project in group</b> Working on the class material. Worksheet Computational exercises.	1,5	7
10	20	Chapter 4. Supervised learning: Classification. Theoretical and computational exercises		X		Working on the class material. Worksheet Computational exercises.	1,5	

11	21	Chapter 4. Supervised learning: Classification. K-nearest neighbors.	X			Working on the class material. Worksheet Computational exercises.	1,5	7
11	22	Chapter 4. Supervised learning: Classification. Theoretical and computational exercises		X		Working on the class material. Worksheet Computational exercises. <b>Tutorial group.</b>	1,5	
12	23	Chapter 4. Supervised learning: Classification. Random forest	X			Working on the class material. Worksheet Computational exercises.	1,5	7
12	24	Chapter 4. Supervised learning: Classification. Application: Credit risk.		X		Working on the class material. Worksheet Computational exercises.	1,5	
13	25	Chapter 4. Supervised learning: Classification. Support-vector machines.	X			Working on the class material. Worksheet Computational exercises.	1,5	7
13	26	Chapter 4. Supervised learning: Classification. Application: Fraud detection.		X		Working on the class material. Worksheet Computational exercises.	1,5	
14	27	Chapter 4. Supervised learning: Classification. Boosting	X			<b>Third part of the project in groups</b> Working on the class material. Worksheet Computational exercises.	1,5	7
14	28	Chapter 4. Supervised learning: Classification. Application: Bankruptcy prediction		X		Working on the class material. Worksheet Computational exercises.	1,5	
<b>SUBTOTAL</b>							<b>42</b>	<b>+ 68 = 110</b>
15		<b>Tutorial classes and projects deadlines.</b>				<b>Presentation of the project in groups</b> Individual and group tutorial classes. Preparation for the final exam.	3	
16- 18		<b>Final exam</b>				Preparation for the final exam. Final exam	3	
<b>TOTAL</b>								