SUBJECT DENOMINATION: Bayesian data analysis			
DEGREE:	**Data Science and Engineering**	**COURSE: 3rd**	**SEMESTER: 2**

CRONOGRAM OF THE SUBJECT

WEEK	SESION	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: Bayesian basics. Bayes theorem. Prior and posterior distributions	X			Working on the class material. Worksheet	1,5	7
1	2	Chapter 1: Bayesian basics. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercices.	1,5	
2	3	Chapter 1: Bayesian basics. Credible intervals. Bayesian prediction	X			Working on the class material. Worksheet Computational exercices.	1,5	7
2	4	Chapter 1: Bayesian basics. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercices.	1,5	
3	5	Chapter 2: Exact Bayesian estimation Coin tossing problems. Rare events.	X			Working on the class material. Worksheet Computational exercices.	1,5	7
3	6	Chapter 2: Exact Bayesian estimation Theoretical and computational exercises.		x		Working on the class material. Worksheet Computational exercices.	1,5	
4	7	Chapter 2: Exact Bayesian estimation Bayesian estimation for the normal distribution	X			Working on the class material. Worksheet Computational exercices.	1,5	7
4	8	First partial exam. Chapter 2: Exact Bayesian estimation Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercices.	1,5	

5	9	Chapter 3. Bayesian networks Graphical models. Latent variables.	X			Working on the class material. Worksheet Computational exercices.	1,5	7
5	10	Chapter 3. Bayesian networks Theoretical and computational exercises		X		Asimilar y entender la clase Worksheet Computational exercices.	1,5	
6	11	Chapter 3. Bayesian networks Parameter learning. Structure learning.	X			First part of the project in group Working on the class material. Worksheet Computational exercices.	1,5	7
6	12	Chapter 3. Bayesian networks Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercices.	1,5	
7	13	Chapter 4. Approximate Bayesian estimation. Numerical methods	X			Working on the class material. Worksheet Computational exercices.	1,5	7
7	14	Chapter 4. Approximate Bayesian estimation. Theoretical and computational exercises.		X		Working on the class material. Worksheet Computational exercices. Tutorial group.	1,5	
8	15	Chapter 4. Approximate Bayesian estimation. Sampling methods. Rejection sampling. Importance sampling.	X			Working on the class material. Worksheet Computational exercices.	1,5	7
8	16	Chapter 4. Approximate Bayesian estimation. Theoretical and computational exercises.		X		Entender y asimilar la clase. Worksheet Computational exercices.	1,5	
9	17	Chapter 4. Approximate Bayesian estimation. Sampling methods. Morte Carlo Markov Chain methods. Gibbs sampling.	X			Entender y asimilar la clase. Worksheet Computational exercices.	1,5	7
9	18	Partial exam by groups. Chapter 4. Approximate Bayesian estimation Theoretical and computational exercises.		X		Entender y asimilar la clase. Worksheet Computational exercices.	1,5	
10	19	Chapter 5. Bayesian regression and hierarchical models Linear models	X			Second part of the project in group. Entender y asimilar la clase. Worksheet Computational exercices.	1,5	7

10	20	Chapter 5. Bayesian regression and hierarchical models Theoretical and computational exercises.		X		Entender y asimilar la clase. Worksheet Computational exercices.	1,5	
11	21	Chapter 5. Bayesian regression and hierarchical models Generalized linear models	X			Working on the class material. Worksheet Computational exercices.	1,5	
11	22	Chapter 5. Bayesian regression and hierarchical models Theoretical and computational exercises		X		Working on the class material. Worksheet Computational exercices. Tutorial group.	1,5	7
12	23	Chapter 5. Bayesian regression and hierarchical models Hierarchical models	X			Working on the class material. Worksheet Computational exercices.	1,5	
12	24	Chapter 5. Bayesian regression and hierarchical models Theoretical and computational exercises		X		Working on the class material. Worksheet Computational exercices.	1,5	7
13	25	Chapter 6. Bayesian classification and clustering Bayes classifier. Mixtures of distributions.	X			Working on the class material. Worksheet Computational exercices.	1,5	
13	26	Chapter 6. Bayesian classification and clustering Theoretical and computational exercises		X		Working on the class material. Worksheet Computational exercices.	1,5	7
14	27	Chapter 7. Dynamic models Dynamic linear models	X			Third part of the project in groups Working on the class material. Worksheet Computational exercices.	1,5	
14	28	Chapter 7. Dynamic models Theoretical and computational exercises		X		Working on the class material. Worksheet Computational exercices.	1,5	7
SUBTOTAL							**42**	**+ 68 = 110**
15		Tutorial classes and projects deadlines.				Presentation of the project in groups Individual and group tutorial classes. Preparation for the final exam.	3	
16-18		Final exam				Preparation for the final exam. Final exam	3	
TOTAL								