uc3m | Universidad Carlos III de Madrid
Vicerrectorado de Estudios
Apoyo a la docencia y gestión del grado

COURSE: Modern Theory of Detection and Estimation		
DEGREE: Sound and Image Engineering	YEAR: 2020/2021	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		
			LECTURES	SEMINARS		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 6,5h)
1	1	Introduction to the course	X			Generalities, context, admin	1,66	6,5
	2	**Review of statistics**		X		Review of random variables and calculus	1,66	
2	3	**Block 1 - Detection** **Analytic detection theory (I)**	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	4	Introduction to python (I)		X		Background in python	1,66	
3	5	Analytic detection theory (II)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	6	Introduction to python (II)		X		Background in python	1,66	
4	7	Machine classification (I)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	8	Analytic detection problems (I)		X		pen and paper problems	1,66	
5	9	Machine classification (II)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	10	Analytic detection problems (II)		X		work in python notebooks	1,66	
6	11	**Evaluation Block 1 (10%)**	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	12	Machine classification in practice (I)				work in python notebooks	1,66	
7	13	**Block 2 - Estimation** **Analytic Estimation Theory (I)**	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	14	Machine classification in practice (II)		X		work in python notebooks	1,66	
8	15	Analytic Estimation Theory (II)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	16	Machine classification in practice (III)		X		work in python notebooks	1,66	
9	17	Machine Learning in estimation (I)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	18	Analytic Estimation Problems (I)		X		pen and paper problems	1,66	
10	19	Machine Learning in estimation (II)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	20	Analytic Estimation Problems (II)		X		pen and paper problems	1,66	
11	21	**Evaluation Block 1 (10%)**	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	22	Machine learning in estimation in practice (I)		X		work in python notebooks	1,66	
12	23	**Block 3 - Filtering** **Optimal filters (I)**	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	24	Machine learning in estimation in practice (II)		X		work in python notebooks	1,66	
13	25	Optimal filters (II)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	26	Machine learning in estimation in practice (III)		X		work in python notebooks	1,66	
14	27	Optimal filters (III)	X			Reading to be determined / Personal study of lecture contents	1,66	6,5
	28	Filtering in practice (I)		X		work in python notebooks	1,66	
	29	Extra session: Filtering in practice (II)		X		work in python notebooks	1,66	3,25
						Subtotal 1	**48**	**94**
						Total 1 *(Hours of class plus student homework)*	**142**	

15		Tutorials, handing in, etc					3,6	-
16 17 18		Assessment					4	10
						Subtotal 2	**8**	**10**
						Total 2 *(Hours of class plus student homework)*	**18**	

TOTAL (*Maximun 160 horas*)	**160**