Universidad Carlos III de Madrid
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COURSE:	LINEAR ALGEBRA		
DEGREE:	INFORMATICS ENGINEERING	YEAR: FIRST	TERM: FIRST

WEEKLY PLANNING								
WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	Indicate YES/NO If the session needs 2 teachers	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1	Introduction to the subject Theory unit 0: Review	X			NO	- Presentation of the subject - Introductory overview	1,66	6
1	2	Introduction to the subject Test		X		NO	- Presentation of the problem classes - Initial test	1,66	
2	3	Theory unit 1: Systems of Linear Equations (part I)	X			NO	- Theory Unit 1 (part I) * Geomery of SLE in Rn * Direct methods resolution	1,66	6
2	4	Exercises Unit 0		X		NO	- Exercises Unit 0	1,66	
3	5	Theory unit 1: Systems of Linear Equations (part II)	X			NO	- Theory Unit 1 (part II) * Matrix Methods * Existence and uniqueness of solutions	1,66	6
3	6	Exercises Unit 1 (Part I)		X		NO	- Exercises Unit 1 (Part I)	1,66	

4	7	Theory unit 2: Vector Spaces	X			NO	- Theory Unit 2 * Spaces Theory. Linear independence * Span. Basis and dimension * Dot product and norm	1,66	6
4	8	Exercises Unit 1 (Part II)		X		NO	- Exercises Unit 1 (Part II)	1,66	
5	9	Theory unit 3: Matrix	X			NO	- Theory Unit 3 * Definitions and types of matrices * Matrix operations and properties * Inverse and determinant of a matrix * Matrix subspaces	1,66	6
5	10	Exercises Unit 2		X		NO	- Exercises Unit 2	1,66	
6	11	Theory unit 4: Linear Transformations	X			NO	- Theory Unit 4 * Definitions. Associated matrix * Operations and properties * Image and kernel	1,66	6
6	12	Exercises Unit 3		X		NO	- Exercises Unit 3	1,66	
7	13	Theory unit 5: Bases	X			NO	- Theory Unit 5 * Coordinates *Change of base	1,66	6
7	14	Exercises Unit 4		X		NO	- Exercises Unit 4	1,66	
8	15	Theory unit 6: Orthogonality	X			NO	- Theory Unit 6 * Orthogonality, orthogonal arrays and LT * Orthogonal and orthonormal bases * Orthogonal complements * Gram-Schmidt Process and QR factorization	1,66	6
8	16	Exercises Unit 5		X		NO	- Exercises Unit 5	1,66	
9	17	Theory unit 7: Least Squares	X			NO	- Theory Unit 7 * Best approximation *Least squares solution * Curve fitting	1,66	6
9	18	Exercises Unit 6		X		NO	- Exercises Unit 6	1,66	
10	19	Theory review units 1-6	X			NO	- Theory review units 1-6	1,66	6
10	20	Exercises review units 1-6		X		NO	- Exercises review units 1-6	1,66	
11	21	Theory unit 8: Eigenvalues and Eigenvectors (Part I)	X			NO	- Theory Unit 8 (Part I) * Introduction and definitions * Calculation of eigenvalues and eigenvectors * Properties	1,66	6
11	22	Exercises Unit 7 (Part I)		X		NO	- Exercises Unit 7 (Part I)	1,66	
11	23	Control				YES	- Control	1,66	

12	24	Theory unit 8: Eigenvalues and Eigenvectors (Part II)	X			NO	- Theory Unit 8 (Part II) * Similarity and diagonalization * Spectral theorem	1,66	6
12	25	Exercises Unit 7 (Part I)		X		NO	- Exercises Unit 7 (Part II)	1,66	
13	26	Theory unit 9: Pseudoinverse and Singular Values Descomposition (Part I)	X			NO	- Theory Unit 9 * Pseudoinverse * Singular values descomposition	1,66	6
13	27	Exercises Unit 8		X		NO	- Exercises Unit 8	1,66	
14	28	Review	X			NO	- Review	1,66	6
14	29	Exercises Unit 9		X		NO	- Exercises Unit 9	1,66	
							Subtotal 1	**48,33**	**84**

		Total 1 (Hours of class plus student homework hours between weeks 1-14)		

15		Tutorials, handing in, etc							
16									
17		Assessment						3	14,67
18									
							Subtotal 2	**3**	**14.67**

		Total 2 (Hours of class plus student homework hours between weeks 15-18)	17,67

TOTAL (Total 1 + Total 2. _Maximum 180 hours_)	**150**