



<b>COURSE: LINEAR ALGEBRA</b>		
<b>DEGREE: TELECOMMUNICATION TECHNOLOGY ENGINEERING</b>	<b>YEAR: FIRST</b>	<b>TERM: FIRST</b>

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 Exercises Unit 0		X		No	- Presentation of the problem classes - Exercises Unit 0	1,66	
2	3	Theory: Complex numbers	X			No	- Definitions, operations and properties - Forms of complex numbers	1,66	6
2	4	Exercises Unit 0		X		No	- Exercises complex numbers	1,66	
3	5	Theory unit 1: Systems of Linear Equations (part I)	X			No	- Theory Unit 1 (part I) * Geomery of SLE in $R^n$ * Direct methods resolution	1,66	6
3	6	Exercises Unit 1 (Part I)		X		No	- Exercises Unit 1 (Part I)	1,66	
4	7	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

4	8	Exercises Unit 1 (Part II)		X		No	- Exercises Unit 1 (Part II)	1,66	
5	9	Theory unit 2: Vector Spaces	X			No	- Theory Unit 2 * Spaces Theory. Linear independence * Span. Basis and dimension * Dot product and norm * Orthogonal projection	1,66	6
5	10	Exercises Unit 2		X		No	- Exercises Unit 2	1,66	
6	11	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
6	12	Exercises Unit 3		X		No	- Exercises Unit 3	1,66	
7	13	Assessment test I			Class Room	Yes	- Assessment test I	1,66	
7	14	Theory unit 4: Linear Transformations	X			No	- Theory Unit 4 * Definitions. Associated matrix * Operations and properties * Image and kernel	1,66	6
7	15	Exercises Unit 4		X		No	- Exercises Unit 4	1,66	
8	16	Theory unit 5: Bases	X			No	- Theory Unit 5 * Coordinates * Change of base	1,66	6
8	17	Exercises Unit 5		X		No	- Exercises Unit 5	1,66	
9	18	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
9	19	Exercises Unit 6		X		No	- Exercises Unit 6	1,66	
10	20	Theory unit 7: Least Squares	X			No	- Theory Unit 7 * Best approximation * Least squares solution * Curve fitting	1,66	6
10	21	Exercises Unit 7		X		No	- Exercises Unit 7	1,66	
11	22	Assessment test II			Class Room	Yes	- Assessment test II	1,66	
11	23	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	24	Exercises Unit 8 (Part I)		X		No	- Exercises Unit 7 (Part I)	1,66	

12	25	Theory unit 8: Eigenvalues and Eigenvectors (Part II)	X			No	- Theory Unit 8 (Part II) * Similarity and diagonalization * Diagonalization * Spectral theorem	1,66	6
12	25	Exercises Unit 8 (Part II)		X		No	- Exercises Unit 7 (Part II)	1,66	
13	27	Theory Unit 9: Differential equations (Part I)	X			No	- Introduction - Types, solution an graphic interpretation	1,66	6
13	28	Exercises Unit 9 (Part I)		X		No	- Exercises Unit 9 (Part I)	1,66	
14	29	Theory Unit 9: Differential equations (Part II)	X			No	- Systems differential equations - Solution methods - Stability	1,66	6
14	30	Exercises Unit 9 (Part II)		X		No	- Exercises Unit 9 (Part II)	1,66	
<b>Subtotal 1</b>								<b>49,8</b>	<b>84</b>
<b>Total 1 (Hours of class plus student homework hours between weeks 1-14)</b>								133,8	
15		Tutorials, handing in, etc.							
16		Assessment						3	13,2
17									
18									
<b>Subtotal 2</b>								<b>3</b>	<b>13,2</b>
<b>Total 2 (Hours of class plus student homework hours between weeks 15-18)</b>								16,2	
<b>TOTAL (Total 1 + Total 2. <u>Maximum 180 hours</u>)</b>								<b>150</b>	