



<b>TITLE OF THE COURSE:</b> Linear Algebra		
<b>GRADUATE:</b> Bachelor's Degree in Mechanical Engineering (221)	<b>COURSE:</b> 2022-2023	<b>QUARTER:</b> First

*29 sessions (15 in a master group, 14 in a small group) in 14 weeks.*

WEEKLY PLANNING OF THE COURSE								
WEEK	SESSION	DESCRIPTION	GROUP				STUDENT'S WEEKLY WORK	
			BIG	SMALL			DESCRIPTION	CLASSROOM HOURS
1	1	Presentation 0. Complex Numbers	X				1,66	7
1		Selected exercises		X			1,66	
		0. Complex Numbers 1. Systems of linear equations	X				1,66	7
		Selected exercises		X			1,66	
	5	1. Systems of linear equations	X				1,66	7
		Selected exercises		X			1,66	
		1. Systems of linear equations 2.1 Matrix operations	X				1,66	7
	8	Selected exercises		X			1,66	
5		2.2 The inverse of a matrix 2.3 Block matrices	X				1,66	7
5		Selected exercises		X			1,66	
		2.4 Determinants	X				1,66	7
		Selected exercises <b>Control of themes 0 and 1</b>		X			1,66	

	3.1 Vector spaces and subspaces	X					1,66	
	3.2 Null space and column space of a matrix	X					1,66	7
	3.3 Linearly independent sets and bases	X					1,66	
	Selected exercises		X				1,66	
8	3.4 Coordinate Systems and Dimension of a Vector Space	X					1,66	7
8	Selected exercises		X				1,66	
	3.5 Linear transformations	X					1,66	7
	Selected exercises		X				1,66	
	4.1 Eigenvectors and eigenvalues	X					1,66	7
	4.2 The characteristic equation	X					1,66	
21	Selected exercises		X				1,66	
	4.3 Diagonalisation	X					1,66	7
	5.1 Scalar product, norm and orthogonality	X					1,66	
	<b>Control of themes 2 and 3</b>		X				1,66	
	Selected exercises		X				1,66	
	5.2 Orthogonal sets	X					1,66	7
	5.3 Orthogonal projection	X					1,66	
25	Selected exercises		X				1,66	
26	5.4 The Gram-Schmidt process	X					1,66	7
	5.5 Least squares problems	X					1,66	
	Selected exercises		X				1,66	
	6. Diagonalisation of symmetric matrices	X					1,66	7
29	Selected exercises		X				1,66	

**Subtotal 1 146,66 98**

**Total 1 (Face-to-face and student work hours between weeks 1-14)**

**144,66**

15-	Extra sessions, tutorials, etc.						3,33	6
	Final exam							

**Subtotal 2 3,33 12**

**Total 2 (Face-to-face and student work hours between weeks 15-18)**

**TOTAL (Total 1 + Total 2)**

**160**