



COURSE: MATHEMATICS FOR ECONOMICS II		
DEGREE: Business Administration, Dual Bachelor in Law and Business Administration, Dual Bachelor in International Studies and Business Administration, Degree in Finance and Accounting, Bachelor's Degree in Management and Technology	YEAR: 1st	TERM: 2nd

WEEKLY PLANNING								
WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		Special room for session (computer classroom, audio-visual classroom...)	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS		DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1	Chapter 1: Principal minors and rank of a matrix. Systems of linear equations: definitions and matrix form.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
1	2	Chapter 1: Matrices. Operations with matrices. Determinant of a square matrix. Properties of the determinants. Inverse Matrix. Exercises 1-1, 1-3, 1-4, 1-5, 1-6, 1-7.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
2	3	Chapter 1: Rouché-Frobenius Theorem. Resolution of systems of linear equations: Methods of Gauss and Cramer.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	5

2	4	"Chapter 1: Exercises 1-8, 1-9, 1-10, 1-11, 1-12.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	
3	5	Chapter 2: Introduction to the Topology of Euclidean spaces. Open, closed, bounded sets. Interior and boundary. Convex sets.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
3	6	Chapter 1: Exercises 1-13 a 1-22.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
4	7	Chapter 2: Graphic of a funtion. Level curves and surfaces. Limits of functions.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
4	8	Chapter 2: Graphic representation of sets in Euclidean spaces and determination of its topological properties. Exercises 2-1, 2-2.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
5	9	Chapter 2: Continuity of functions. Gobal extrema and fixed points. Theorem of Weierstrass. Theorem of Brouwer. Aplications.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
5	10	Chapter 2: Exercises on graphic representation of functions, calculus of Limits. Aplications. Exercises 2-3, 2-4, 2-5, 2-6.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
6	11	Chapter 3: Differential calculus of functions of several variables. Partial derivatives. Diferentiability. Directional derivatives	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
6	12	Chapter 2: Exercises on continuity of functions and aplications. Exercises 2-7, 2-8, 2-9, 2-10, 2-11, 2-12.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
7	13	Chapter 3: Chain rule. Interpretation of the gradient. Tangent lines and tangent planes.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
7	14	Chapter 3: Exercises 3-1, 3-2, 3-3, 3-5 (ó 3-6), 3-7, 3-8, 3-9, 3-10.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
8	15	Chapter 4: Second order derivatives. Hessian matrix. Implicit differentiation.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
8	16	Chapter 3: Exercises 3-12, 3-13, 3-14, 3-17, 3-19, 3-20. TEST 1 (Chapters 1 and 2)		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
9	17	Chapter 4: Taylor polynomials Quadratic forms.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	5

9	18	Chapter 4: Exercises 4-1, 4-2, 4-3, 4-5, 4-6, 4-7, 4-8, 4-9.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	
10	19	Chapter 4: Concave/convex functions. Characterizations.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
10	20	Chapter 4: Exercises 4-10, 4-11, 4-12, 4-113, 4-14.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
11	21	Chapter 5: Optimization on open sets. First order necessary conditions. Second order necessary and sufficient conditions.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
11	22	Chapter 4: Exercises 4-15, 4-16, 4-17, 4-18, 4-19, 4-20.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
12	23	Chapter 5: Extreme points with equality constraints. First order necessary conditions. Second order necessary and sufficient conditions.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
12	24	Chapter 5: Exercises 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7, 5-11.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	5
13	25	Chapter 5: Extreme points with inequality constraints. First order necessary conditions. Economic interpretation of the Lagrange multiplier.	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
13	26	Chapter 5: Exercises 5-8, 5-9, 5-12, 5-13, 5-14, 5-15, 5-16.		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	4
14	27	Chapter 5: Global extreme points of concave/convex functions. Examples	X			Reading and solving exercises and/or executing assigned homeworks.	1,5	
14	28	Chapter 5: Exercises 5-17, 5-18, 5-19, 5-20. TEST 2 (Chapters 3 and 4)		X		Reading and solving exercises and/or executing assigned homeworks.	1,5	4
Subtotal 1							42	68
Total 1 (<i>Hours of class plus student homework hours between weeks 1-14</i>)							110	

15		Tutorials, handing in, etc					10	
16		Assessment					3	27
17								

18									
									Subtotal 2
									40
Total 2 (<i>Hours of class plus student homework hours between weeks 15-18</i>)									40
TOTAL (<i>Total 1 + Total 2</i>)									150