Universidad Carlos III de Madrid
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COURSE: CALCULUS I		
DEGREE: Bachelor in Audiovisual System Engineering	**YEAR: FIRST**	**TERM: FIRST**

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	Introduction: Construction of real numbers. Induction.	X		NO	Personal study + read sections 1.1 – 1.6 of Stewart's book (see reference list)	1,66	
1	2	Exercises from Chapter 1		X	NO	idem	1,66	7
2	3	Sequences and their basic properties	X		NO	Personal study + read classroom notes on sequences	1,66	
2	4	Exercises from Chapter 1 (continued)		X	NO	idem	1,66	7
3	5	Series of numbers and their basic properties.	X		NO	Personal study + read classroom notes on series	1,66	
3	6	Exercises from Chapter 1 (continued)		X	NO	idem	1,66	7
4	7	Functions. Composition and inverse. Elementary functions	X		NO	Personal study + read sections 2.1- 2.6 of Stewart's book	1,66	
4	8	Complete Exercises from Chapter 1		X	NO	idem	1,66	7

5	9	Limits: the sandwich rule; one-sided limits; infinite limits; limits of indeterminate type	X		NO	Personal study + read sections 2.5 of Stewart's book	1,66	
5	10	Test #1 + Exercises from Chapter 2		X	NO	idem	1,66	7
6	11	Continuity: motivation & definition, first examples, continuity, inversion & composition	X		NO	Personal study + read sections 2.8 & 2.9 of Stewart's book	1,66	7
6	12	Exercises from Chapter 2 (continued)		X	NO	idem	1,66	
7	13	Global properties of continuous functions on closed intervals. Derivatives: definition & first examples.	X		NO	Personal study + read sections 3.1 - 3.5 of Stewart's book	1,66	7
7	14	Complete Exercises from Chapter 2		X	NO	idem	1,66	
8	15	Derivatives: Algebra of derivatives. The Chain Rule. Derivatives of inverse functions.	X		NO	Personal study + read sections 4.1 - 4.4 of Stewart's book	1,66	7
8	16	Exercises from Chapter 3		X	NO	idem	1,66	
9	17	Rolle's Theorem. Mean Value Theorem. L'Hôpital's Rule	X		NO	Personal study	1,66	7
9	18	Exercises from Chapter 3 (continued)		X	NO	idem	1,66	
10	19	Taylor polynomial: basic properties and first examples; applications to limits	X		NO	Personal study + read sections 4.5 & 4.7 of Stewart's book	1,66	7
10	20	Test #2 + Complete Exercises from Chapter 3		X	NO	idem	1,66	
11	21	Taylor expansions: concavity and convexity; applications to function graphing; Lagrange's remainder formula	X		NO	Personal study + read sections 5.1 - 5.3 of Stewart's book	1,66	7
11	22	Exercises from Chapter 4		X	NO	idem	1,66	
12	23	Integration: definite integral and its basic properties. Primitives and the Fundamental Theorem of Calculus	X		NO	Personal study + read sections 5.4 & 5.5 of Stewart's book	1,66	7
12	24	Complete Exercises from Chapter 4 + Exercises form Chapter 5		X	NO	idem	1,66	
13	25	Indefinite integrals and Barrow's Rule; trivial primitives; change of variables	X		NO	Personal study + read sections 7.1 – 7.4 of Stewart's book	1,66	7
13	26	Exercises from Chapter 5		X	NO	idem	1,66	

14	27	Integration by parts. Integrals of rational functions	X		NO	Personal study	1,66	7
14	28	Complete Exercises from Chapter 5		X	NO	idem	1,66	
						Subtotal 1	**46,48**	**98**
						Total 1 *(Hours of class plus student homework hours between weeks 1-14)*	**144,48**	

15		Test #3 +Tutorials, handing in of assignments, class make-ups			NO	Personal study	0	7
16		Preparation for Final				idem	3	7
17								
18								
						Subtotal 2	**3**	**14**
						Total 2 *(Hours of class plus student homework hours between weeks 15-18)*	**17**	

TOTAL *(Total 1 + Total 2)*	**161,48**