



COURSE: CALCULUS I

DEGREE: Bachelor in Biomedical Engineering

YEAR: FIRTS

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	The real line. Ordered fields. Number systems. Absolute value, bounds, and intervals.	X		NO	NO	Personal study + read "The Real Line" in classroom notes	1,66	7
1	2	Exercises		X	NO	NO	idem	1,66	
2	3	Real functions. Definitions and basic concepts. Elementary functions. Operations with functions.	X		NO	NO	Personal study + read "Real Functions" in classroom notes	1,66	7
2	4	Exercises		X	NO	NO	idem	1,66	
3	5	Sequences. Limit of a sequence. Number e. Indeterminacies. Asymptotic comparison of sequences.	X		NO	NO	Personal study + read "Sequences" in classroom notes	1,66	7
3	6	Exercises		X	NO	NO	idem	1,66	
4	7	Series. Series of nonnegative terms. Alternating series. Telescopic series.	X		NO	NO	Personal study + read "Series" in classroom notes	1,66	7
4	8	Exercises		X	NO	NO	idem	1,66	

5	9	Limits. Properties. Asymptotic comparison of functions.	X		NO	NO	Personal study + read "Limit of a function" in classroom notes	1,66	
5	10	Test #1 + Exercises		X	NO	NO	idem	1,66	7
6	11	Continuity. Properties. Elementary functions. Discontinuities. Continuity in closed intervals.	X		NO	NO	Personal study + read "Continuity" in classroom notes	1,66	
6	12	Exercises		X	NO	NO	idem	1,66	7
7	13	Continuity in closed intervals. Derivatives. Algebraic properties.	X		NO	NO	Personal study + finish reading "Continuity" and read "Derivatives" in classroom notes	1,66	
7	14	Exercises		X	NO	NO	idem	1,66	7
8	15	Local behaviour: Rolle's Theorem, Mean Value Theorem, and L'Hôpital's Rule	X		NO	NO	Personal study + finish reading "Derivatives" in classroom notes	1,66	
8	16	Exercises		X	NO	NO	idem	1,66	7
9	17	Taylor: Landau's o notation. Taylor's polynomial. Calculating limits.	X		NO	NO	Personal study + read "Taylor Expansions" in classroom notes	1,66	
9	18	Exercises		X	NO	NO	idem	1,66	7
10	19	Remainder and Taylor's theorem. Numerical approximations. Taylor series.	X		NO	NO	Personal study + continue reading "Taylor Expansions" in classroom notes	1,66	
10	20	Test #2 + Exercises		X	NO	NO	idem	1,66	7
11	21	Local behaviour of functions. Concavity and convexity. Function graphing.	X		NO	NO	Personal study + finish reading "Taylor Expansions" in classroom notes	1,66	
11	22	Exercises		X	NO	NO	idem	1,66	7
12	23	Primitives. Basic rules. Integration by parts. Primitive of rational functions. Change of variable.	X		NO	NO	Personal study + read "Primitives" in classroom notes	1,66	
12	24	Exercises		X	NO	NO	idem	1,66	7
13	25	Integrals. Riemann's integral. Properties. Riemann's sums. Fundamental theorem of calculus.	X		NO	NO	Personal study + read "Fundamental Theorem of Calculus" in classroom notes	1,66	
13	26	Exercises		X	NO	NO	idem	1,66	7
14	27	Geometric applications. Area of flat figures. Volumes of revolution. Length of curves.	X		NO	NO	Personal study + read "Geometric Applications of Integrals" in classroom notes	1,66	7
14	28	Exercises		X	NO	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, etc		X	NO				7

16										
17		Assessment							3	
18									7	
								Subtotal 2	3	
									14	
								Total 2 (Hours of class plus student homework hours between weeks 15-18)		17

TOTAL (Total 1 + Total 2. Maximum 180 hours)								161,48	
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