



COURSE: Circuits and Systems		
DEGREE: Bachelor's Degree in Communication System Engineering	YEAR: 1	TERM: 2

WEEKLY PROGRAMMING									
Week	Session	DESCRIPTION	GROUPS (Put X)		Special room for session	Session with 2 tea- chers	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Maximum 7h)
1	1	Topic 1 - Signals <ul style="list-style-type: none"> ■ Introduction ■ Continuous and discrete time ■ Basic operations with signals ■ Transformation of the independent variable 	X			No	Reading chapter 1 of Signals and Systems, Oppenheim, Sec. 1.1 and 1.2	1.66	6
1	2	Topic 1 - Signals <ul style="list-style-type: none"> ■ Exercises P1, P2 and P3 of topic 1 		X		No	Solving the proposed exercises	1.66	
2	3	Topic 1 - Signals <ul style="list-style-type: none"> ■ Signal's properties ■ Signal characterization 	X			No	Reading chapter 1 of Signals and Systems, Oppenheim, Sec. 1.1 and 1.2	1.66	6
2	4	Topic 1 - Signals <ul style="list-style-type: none"> ■ Exercises P4 and P5 of topic 1 		X		No	Solving the proposed exercises	1.66	
3	5	Topic 1 - Signals <ul style="list-style-type: none"> ■ Unitary impulse and unitary step ■ Relationship between them 	X			No	Reading of chapter 1, section 1.4, book Signals and Systems.	1.66	

3	6	Topic 1 - Signals <ul style="list-style-type: none"> ■ Exercises P12 and P14 of topic 1 		X		No	Solving the proposed exercises	1.66	6
4	7	Topic 1 - Signals <ul style="list-style-type: none"> ■ Real exponential signals ■ Complex exponential signals ■ Sinusoidal signals 	X			No	Reading of chapter 1, section 1.3, book Signals and Systems.	1.66	6
4	8	Topic 1 - Signals <ul style="list-style-type: none"> ■ Exercises P13, P15 and P17 of topic 1 		X		No	Solving the proposed exercises	1.66	
5	9	Topic 1 - Signals <ul style="list-style-type: none"> ■ Lab session about signals 		X	LAB	No	Studying the class notes and preparing the lab session	1.66	6
5	10	Topic 2 - Systems <ul style="list-style-type: none"> ■ System definición ■ System interconexion ■ Properties 	X			No	Reading of chapter 1, sections 1.5 and 1.6, in the book Signals and Systems.	1.66	
6	11	Topic 2 - Systems <ul style="list-style-type: none"> ■ Exercises P1 y P2 of topic 2 		X		No	Solving the proposed exercises	1.66	6
6	12	Topic 2 - Systems <ul style="list-style-type: none"> ■ Linearity ■ Invariance property 	X			No	Reading of chapter 1, section 1.5 y 1.6 in the book Signals and Systems.	1.66	
7	13	Topic 2 - Systems <ul style="list-style-type: none"> ■ Exercises P7 and P8 of topic 2 		X		No	Solving the proposed exercises	1.66	6
7	14	Topic 2 - Systems <ul style="list-style-type: none"> ■ LTI systems ■ Impulse response ■ Convolution 	X			No	Reading of chapter 2, section 2.2, in the book Signals and Systems	1.66	
8	15	Topic 2 - Systems <ul style="list-style-type: none"> ■ Exercises P13, P14 and P15 of topic 2 		X		No	Solving the proposed exercises	1.66	

8	16	Topic 2 - Systems <ul style="list-style-type: none"> ▪ LTI systems ▪ Impulse response ▪ Convolution 	X			No	Reading of chapter 2, section 2.3, in the book Signals and Systems	1.66	6
9	17	Topic 2 - Systems <ul style="list-style-type: none"> ▪ Lab session about systems 		X	LAB	No	Studying the class notes and preparing the lab session	1.66	6
9	18	Continuous evaluation topics 1 and 2 Topic 3 - Resistive circuits <ul style="list-style-type: none"> ▪ Continuous evaluation topics 1 and 2 ▪ Electric variables ▪ Circuit elements ▪ Ohm's law 	X			No	Reading of chapter 2 in the book Electric Circuits	1.66	
10	19	Topic 3 - Resistive circuits <ul style="list-style-type: none"> ▪ Simple resistive circuits ▪ Circuit analysis techniques: nodes and branches 	X			No	Reading of chapter 3, sections 3.1, 3.2, 3.3 and 3.4 in the book Electric Circuits. Reading of chapter 4, sections 4.1, 4.2, 4.3 and 4.4 in the book Electric Circuits.	1.66	6
10	20	Topic 3 - Resistive circuits <ul style="list-style-type: none"> ▪ Exercises P1, P2, P7 and P15 of topic 3 		X		No	Solving the proposed exercises	1.66	
11	21	Topic 3 - Resistive circuits <ul style="list-style-type: none"> ▪ Source transformation ▪ Thevenin and Norton equivalents ▪ Maximum power transfer 	X			No	Reading of chapter 3, sections 3.1, 3.2, 3.3 and 3.4 in the book Electric Circuits. Reading of chapter 4, sections 4.1, 4.2, 4.3 and 4.4 in the book Electric Circuits.	1.66	6
11	22	Topic 3 - Resistive circuits <ul style="list-style-type: none"> ▪ Exercises P16, P17 and P21 of topic 3 		X		No	Solving the proposed exercises	1.66	
12	23	Topic 3 - Resistive circuits <ul style="list-style-type: none"> ▪ Lab session about resistive circuits 		X	LAB	No	Studying the class notes and preparing the lab session	1.66	6
12	24	Topic 4 - Filters: Time behavior <ul style="list-style-type: none"> ▪ Time behavior of circuit elements ▪ Series and parallel grouping 	X			No	Reading of chapter 6, sections 6.1, 6.2, 3.3 and 6.3 in the book Electric Circuits.	1.66	

13	25	Topic 4 - Filters: Time behavior <ul style="list-style-type: none"> ▪ 1st. order differential equation ▪ Homogenous equation ▪ Step response ▪ Switching switchers 	X			No	Reading of chapter 7, sections 7.1, 7.2 and 7.3 in the book Electric Circuits.	1.66	6	
13	26	Topic 4 - Filters: Time behavior <ul style="list-style-type: none"> ▪ Exercises P1, P2, P3 and P4 of topic 4 		X		No	Solving the proposed exercises	1.66		
14	27	Topic 5 - Sinusoidal steady-state <ul style="list-style-type: none"> ▪ Phasor representation ▪ Circuit elements in sinusoidal steady state ▪ Circuit analysis in sinusoidal steady state ▪ Power in sinusoidal steady state 	X			No	Reading of chapter 9, sections 9.1-9.5, 9.8-9.9 in the book Electric Circuits.	1.66	6	
14	28	Topic 5 - Sinusoidal steady-state <ul style="list-style-type: none"> ▪ Exercises P2, P4, P5 and P6 of topic 5 		X		No	Solving the proposed exercises	1.66		
14	29	Topic 5 - Sinusoidal steady-state <ul style="list-style-type: none"> ▪ Lab session about sinusoidal steady state 		X	LAB	No	Studying the class notes and preparing the lab session	1.66		
								Subtotal 1 - 132,14	48,14	84

15		Continous evaluation topics 3, 4 and 5						0,5	1,5	
16										
17		Exam preparation						3	12,86	
								Subtotal 2 - 17,86	3	14,36

TOTAL (Total 1+ Total 2. Maximum 180 hours)								150,00 hours
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