SIGNALS AND SYSTEMS I									
1	Course Title:	SIGNALS AND SYSTEMS I							
2	Course Code:	EEM240	1						
3	Type of Course:	Compuls	sory						
4	Level of Course:	First Cyc	le						
5	Year of Study:	2							
6	Semester:	3							
7	ECTS Credits Allocated:	6.00							
8	Theoretical (hour/week):	3.00							
9	Practice (hour/week):	0.00							
10	Laboratory (hour/week):	0							
11	Prerequisites:	None							
12	Language:	Turkish							
13	Mode of Delivery:	Face to f	face						
14	Course Coordinator:	Prof. Dr.	ERDOĞAN DİLAVEROĞLU						
15	Course Lecturers:	Prof. Dr. Erdoğan Dilaveroğlu Yrd. Doç. Dr. Ersen Yılmaz							
16	Contact information of the Course Coordinator:	Prof. Dr. Erdoğan Dilaveroğlu E-mail: dilaver@uludag.edu.tr Tel: (224) 294 2012 Elektrik-Elektronik Müh. Böl., 3. Kat, 324.							
17	Website:								
18	Objective of the Course:	Giving to the students the fundamentals of the signals and systems area of electrical engineering. Also, preparing the students to some higher level courses in such areas of signal processing, circuits, communication and control.							
19	Contribution of the Course to Professional Development:								
20	Learning Outcomes:								
		1	Describe signals mathematically and perform mathematical operations on signals.						
		2	Be familiar with commonly used signals such as sinusoidal signals, complex exponentials, the impulse and step functions, and classify signals as continuous-time or discrete-time, as periodic and non-periodic, as energy or power signals, and as having even or odd symmetry.						
		3	Understand various system properties such as causality, time-invariance, linearity and stability.						
		4	Understand the convolution sum and the convolution integral operations and their implication for analysis of linear time invariant systems.						
		5	Compute the Fourier series (and its inverse) of periodic continuous time and discrete time signals from definitions and using the properties of the Fourier series.						
		6	Compute the Fourier transform (and its inverse) of continuous time signals from definitions and using the properties of the Fourier transform.						
		7	Understand the intuitive meaning of frequency domain and the importance of analyzing and processing signals in the frequency domain.						
		8	Understand the application of Fourier analysis to ideal filtering.						

		9	Use basic mathematics including calculus, complex variables and algebra for the analysis and design of linear time invariant systems used in engineering.
		10	
04	Course Contents		

21	Course Content:											
		Co	our	urse Content:								
Week	Theoretical		Ρ	Practice								
1	Presentation and organization of the Mathematical review: Complex numb	course. ers.										
2	Mathematical review (continued): Po representation of complex numbers a triangle inequality. De Moivre's Theor roots. The complex exponential, Eule formula.	lar and the rem and er's										
3	Continuous and discrete time signals exponential and sinusoidal signals, ir and step functions.	s, mpulse										
4	Continuous and discrete time system system	is, basic										
5	Linear and time invariant (LTI) discre systems: The convolution sum.	te time										
6	LTI continuous time systems: The co integral.	nvolution										
7	Properties of LTI systems, difference differential equations.	e and										
Activit	es			Number	Duration (hour)	Total Work Load (hour)						
Theore	Foperties of continuous and discrete	e time		14	3.00	42.00						
Practic	als/Labs			0	0.00	0.00						
Self_stu	dy and preperation		F	14	5.00	70.00						
Homew	vorks	1		14	5.00	70.00						
Pr b≩ ct	Derivation of the continuous time Fou	urier		0	0.00	0.00						
Field S	tudies			0	0.00							
Midtern	tre并割砂m, convolution and multiplica	tion	Γ	1	1.50	1.50						
Others	• · · · ·			0	0.00	0.00						
Final E	Review and discussion of solutions to	C		1	1.50	1.50						
Total W	Vork Load					185.00						
To ral w	Lextbooks References and/or Other		S	gnals and Systems, A	an V. Oppenheim,	Alan S. Willsky,						
ECTS (Credit of the Course		IVV		no ecinicii referini.	6.00						
TERM L	EARNING ACTIVITIES	NUMBE R	WEIGHT									
Midtern	n Exam	1	40.00									
Quiz		0	0.00									
Home v	work-project	0	0.00									
Final E	xam	1	60.00									
Total		2	100.00									
Contrib Succes	oution of Term (Year) Learning Activitiess Grade	es to	40.00									
Contrib	oution of Final Exam to Success Grade	Э	60.00									
Total			100.00									

Measu Course	ement and Evaluation Techniques Used in the	
24	ECTS / WORK LOAD TABLE	

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
ÖK5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK9	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib1 very low2 lutionLevel:			2 low		3	Medi	um		4 Higl	h		5 Ver	y High			