DIGITAL SIGNAL PROCESSING APPLICATIONS

1	Course Title:	DIGITAL SIGNAL PROCESSING APPLICATIONS	
2	Course Code:	EEM4434	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	8	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	2	
11	Prerequisites:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. ERSEN YILMAZ	
15	Course Lecturers:	Prof. Dr. Erdoğan Dilaveroğlu	
16	Contact information of the Course Coordinator:	Doç. Dr. Ersen Yılmaz E-mail:ersen@uludag.edu.tr Phone: (224) 294 2032 Address: Elektronik Mühendisliği Bölümü 4. Kat, No:431	
17	Website:		
18	Objective of the Course:	Using the fundamental tools and techniques of digital signal processing, to realize the solutions of important problems in the Matlab and to enable students to use Matlab efficiently as a tool.	
19	Contribution of the Course to Professional Development:	To be able to follow innovations and apply them in the field by using the competence of collecting information, researching and analyzing them.	
20	Learning Outcomes:		
		1	To be able to model and solve digital signal processing problems using toerical and practical knowledge
		2	Gain the ability to design and conduct complex experiments and to collect, analyze and interpret data for digital signal processing engineering problems
		3	Attain the ability to design partly or fully for a complex digital signal processing system, process meeting specific requirements under realistic constraints and conditions.
		4	To be able to develop, select, and use modern techniques and tools efficiently using information technologies for digital signal processing applications
		5	Gain the ability to identify, model, and solve complex engineering problems to select and apply appropriate analysis and modelling methods for digital signal processing problems.
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21	Course Content:		

	Course Content:	
Week	Theoretical	Practice
1	Discrete-Time Signals in the Time-Domain	Discrete-Time Signals in the Time-Domain (Applications)
2	Discrete-Time Systems in the Time-Domain	Discrete-Time Systems in the Time-Domain (Applications)
3	Discrete-Time Signals in the Frequency-Domain	Discrete-Time Signals in the Frequency-Domain (Applications)
4	Linear Time Invariant Discrete-Time Signals in the Frequency-Domain	Linear Time Invariant Discrete-Time Signals in the Frequency-Domain (Applications)
5	Digital Processing of Continuous-Time Signals	Digital Processing of Continuous-Time Signals (Applications)
6	Digital Filter Structures: FIR	Digital Filter Structures: FIR (Applications)
7	Digital Filter Structures: IIR	Digital Filter Structures: IIR (Applications)
8	Digital Filter Design : FIR	Digital Filter Design : FIR (Applications)
9	Digital Filter Design : IIR	Digital Filter Design : IIR (Applications)
10	Tunable Digital Filters	Tunable Digital Filters (Applications)
11	Tunable Digital Filters	Tunable Digital Filters (Applications)
12	Multirate Digital Signal Processing	Multirate Digital Signal Processing (Applications)
13	Multirate Digital Signal Processing	Multirate Digital Signal Processing (Applications)
14	Review	Review (Applications)

22	Textbooks, References and/or Other Materials:	1. S.K. Mitra, Digital Signal Processing Laboratory using Matlab, McG Hill, 2000.

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	1.00	14.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm Exams	1	1.00	18.00	18.00
Others	0	0.00	0.00
Final Exams	1	1.00	32.00	32.00
Total Work Load			138.00
ECTS Credit of the Course			4.00

Measurement and Evaluation Techniques Used in the Course	Measurement and evaluation is carried out according to the priciples of Bursa Uludag University Associate and Undergraduate Education Regulation.

24	**ECTS / WORK LOAD TABLE**

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0

ÖK3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**